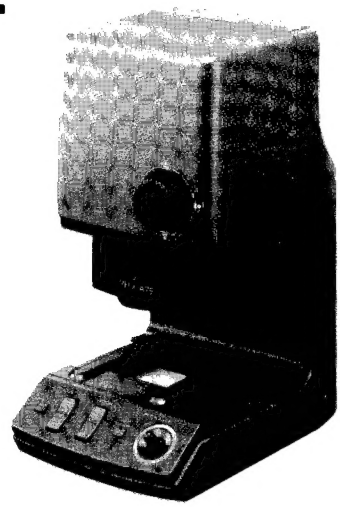
PHV-A7E

SERVICE MANUAL



AEP Model
E Model

SPECIFICATIONS

• System

Video signal	PAL
Image device	Precision CCD image sensor

• Input and output jacks

S video output	4-pin mini DIN Luminance: 1Vp-p, 75 ohms unbalanced, sync negative Chrominance: 0.300Vp-p, 75 ohms unbalanced
Video output	Phono jack, 1Vp-p, 75 ohms unbalanced, sync negative
RFU DC OUT	Special mini jack, 5V DC
Audio output	Phono jack, −7.5dBs, (at output impedance 47 kilohms), impedance less than 2.2 kilohms
MIC IN	Minijack, −60dBS, low impedance with 2.5−3V DC output, impedance 6.8 kilohms

• General

Power requirements	AC 220−240V 50/60Hz
Power consumption	12 W
Operating temperature	5°C to 40°C (41°F to 104°F)
Storage temperature	−20°C to 60°C (−4°F to 140°F)
Range of object field	48.5 × 36.6−8.6 × 6.5 mm ($1^{15}/_{16} \times 1^{1}/_{2}-{}^{11}/_{32} \times {}^{9}/_{32}$ inches)
Dimensions	126 × 256 × 190 (w/h/d) mm ($5 \times 10^{1}/_{8} \times 7^{1}/_{2}$ inches)
Weight	2.3kg (5 lb 1 oz)
Supplied accessories	Film carrier (for strip film 1, for mounted film 1) AV connecting cable (1) Dust cover (1)
Optional accessories	Video printer Microphone F-VS3 S video connecting cable 21-pin connecting cable RFU adaptor LCD colour monitor Film carrier HVT-NA7/SA7

Design and specifications are subject to change without notice.

Note

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

MICROFILM

PHOTO VIDEO CAMERA

SONY®

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

TABLE OF CONTENTS

There is the color reproduction standard frame at the back of the book.

SECTION 1
GENERAL

This section is extracted from instruction manual.

Overview

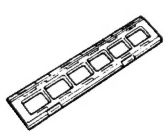
The photo video camera PHV-A7E is a film-to-video converter which enables you to view your photo films on your TV. Having the negative/positive selector, you can easily display both negative and positive films. It also accepts both strip and mounted film. Furthermore, you can use this unit in many other ways such as magnifying a small object on the TV screen.

Main features of the PHV-A7E

- 1/2 inch precision CCD image sensor (470,000 picture elements) for sharp, clear image detail
- High resolution picture (400 TV lines and above)
- S video output for high quality picture
- Negative/positive selector for using both negative and positive films
- Instant automatic focus function for easy focusing
- Zooming function (x6) for making the picture appear closer or farther away
- White balance function for adjusting the white colour of your picture
- Manual iris control for adjusting the brightness to your taste
- Colour balance control for adding colour effect
- Angle rotating control for changing the angle of the picture
- Microphone input for adding sound effects
- Trimming function for cutting unnecessary parts of the picture

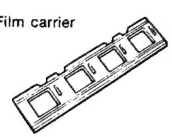
Supplied accessories

Before you start operation, check to see that everything is contained in the package.

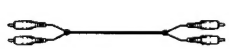


HVT-NA7
For strip 35mm film

Film carrier



HVT-SA7
For mounted 35mm film

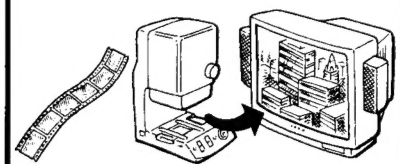


AV connecting cable

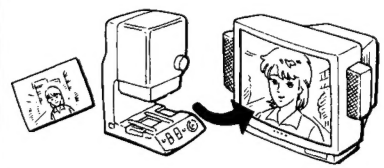
Dust cover

With This Unit, You Can

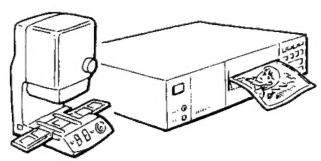
Display negative film on the TV screen



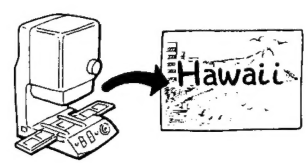
Magnify a small object or photograph on the TV screen



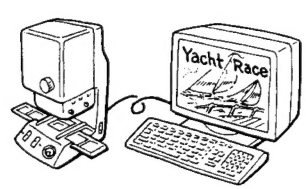
Connect to VCR for editing or video printer for printing



Use as an instant titler for editing



Connect to personal computer for scanning the picture



Add sound effects using a microphone

Precautions

On safety

- Operate the unit only on 220 – 240V AC, 50/60Hz.
- Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Unplug the unit from the wall outlet if it will not be used for an extended period of time. To disconnect the cord, pull it out by grasping the plug. Never pull the cord itself.

On installation

Do not install the unit in a location near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.

On connection

- Before connecting, be sure to turn off all equipment.
- Insert plugs securely, as loose connections may cause hum and noise.
- To disconnect the cord, pull it out by the plug. Never pull the cord itself.
- To avoid interference, turn off equipment not in use.
- If noise occurs in the picture or sound, move the pieces of equipment farther away from each other.
- For details on connections, refer to the instruction manuals covering the corresponding equipment.

On operation

When the unit will not be used, turn the power off to conserve energy and to extend the useful life of your unit.

On cleaning the cabinet

Clean the cabinet and controls with a soft cloth lightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzine.

To clean the plate which covers the light source part, remove the film carrier.

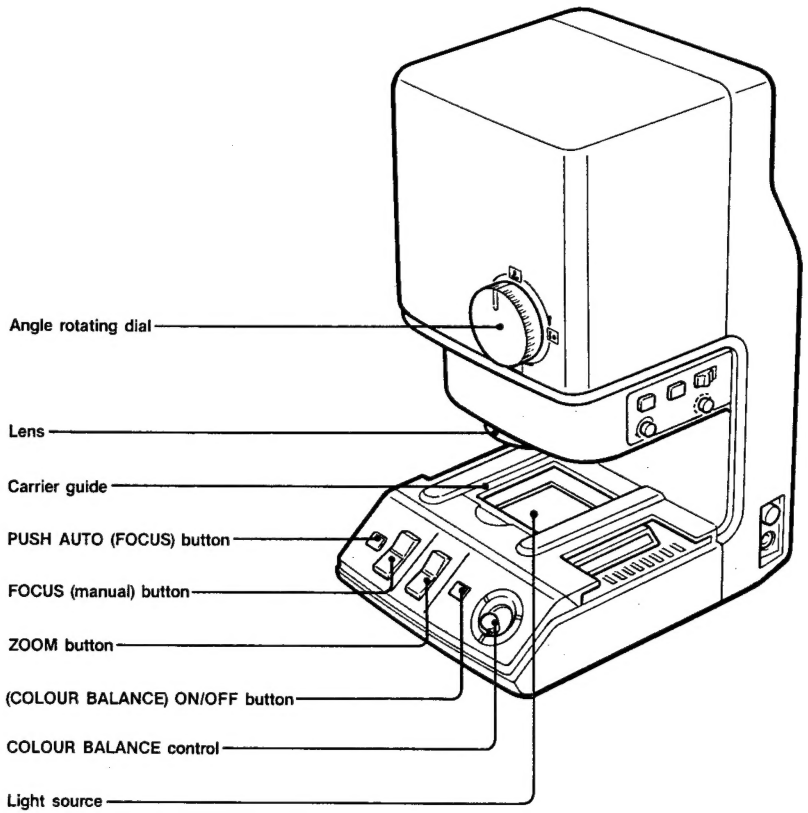
Clean the lens and film with a blower. If dust is on the lens, it will be displayed on the screen.

On repacking

Do not throw away the carton and the packing material. It makes an ideal container to transport the unit in.

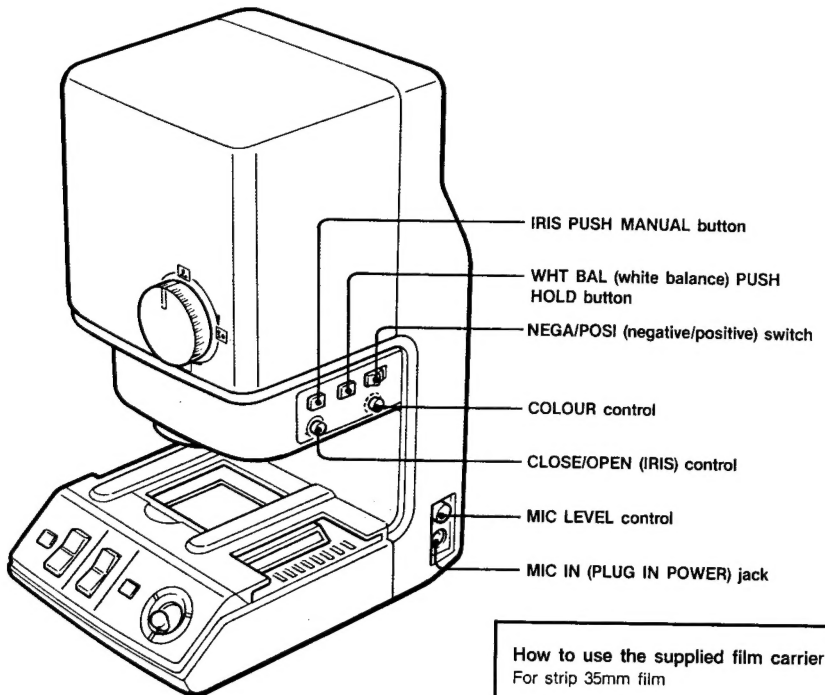
Parts Identification

Front

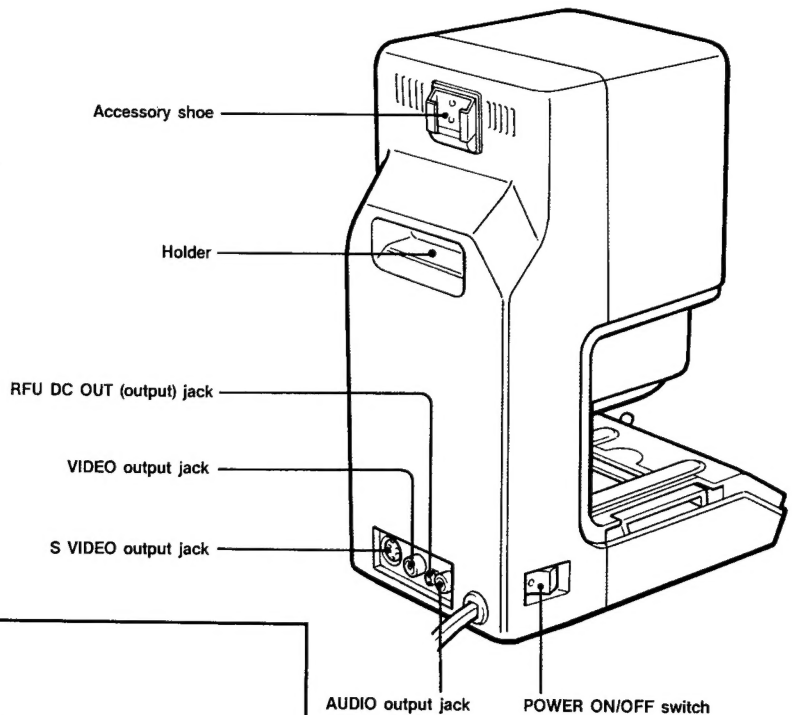


Parts Identification

Right Side

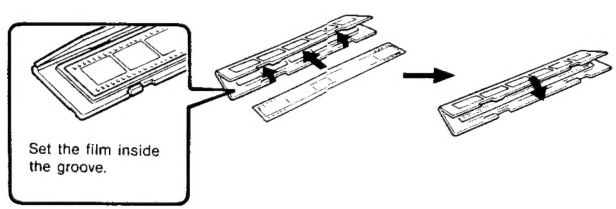


Rear

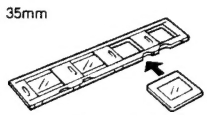


How to use the supplied film carrier

For strip 35mm film



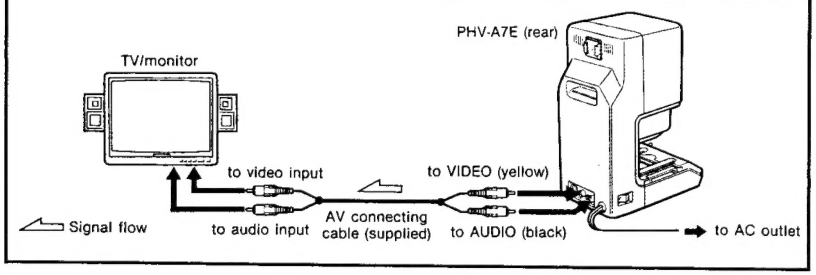
For mounted 35mm film



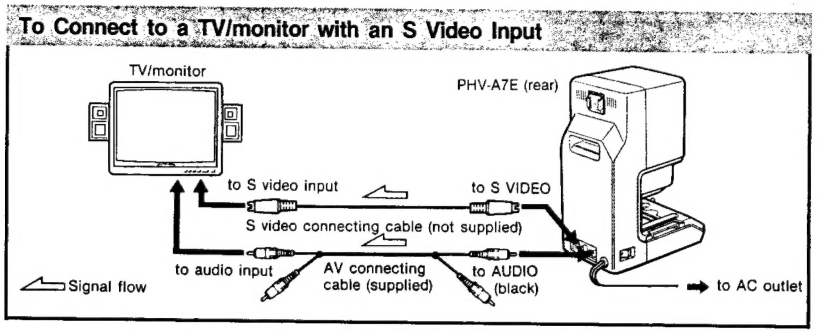
To Connect Other Equipment

Before connection, be sure to turn off the power of all equipment. Refer to the manuals of the corresponding equipment for connection.

To Connect to a TV/monitor with Audio/video Inputs

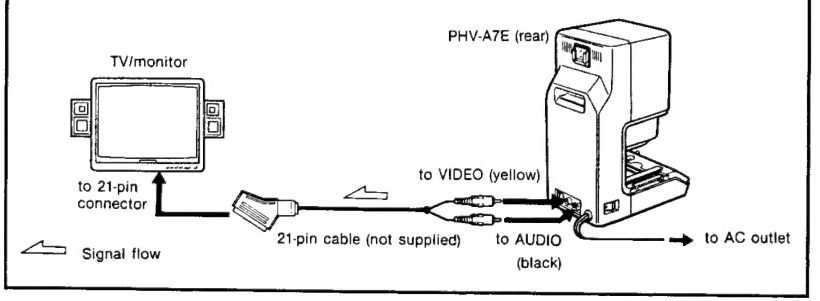


To Connect to a TV/monitor with an S Video Input



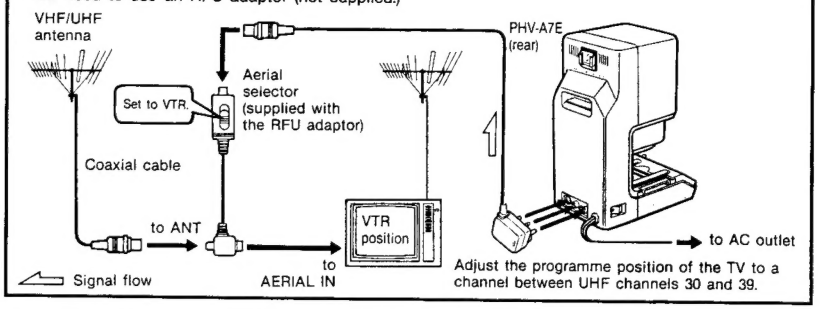
To Connect to a TV/monitor with a 21-pin connector

You need to use the 21-pin connector (EUROCONNECTOR) cable (not supplied).



To Connect to a TV without an Audio/video Input

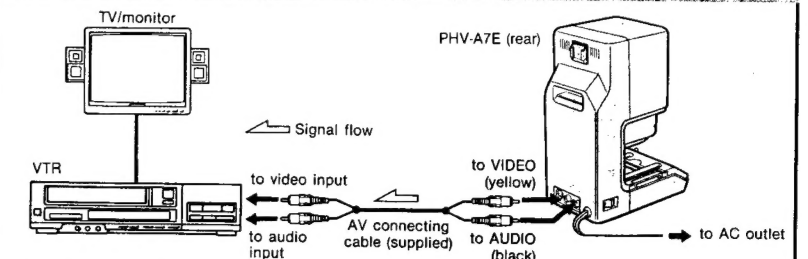
You need to use an RFU adaptor (not supplied.)



If the TV/monitor is stereo

Connect the audio plug (black) of the supplied AV connecting cable to the audio left (white) jack of the TV/monitor. You can also use the AV connecting cable (not supplied.)

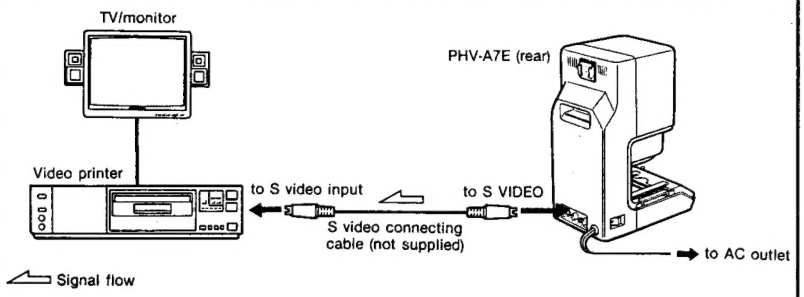
To Connect to a VTR



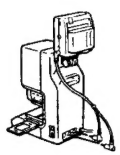
For a VTR with an S video input, use an S video connecting cable (not supplied) for a better quality picture.

To Connect Other Equipment

To Connect to a Video Printer



To Connect to an LCD Colour Monitor



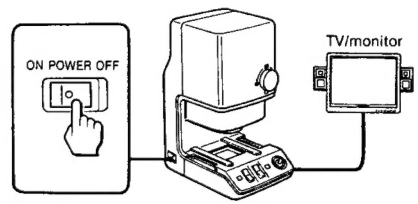
Attach the LCD colour monitor (not supplied) via the accessory shoe, then connect the monitor and PHV-A7E with the supplied AV connecting cable.

Basic Operation

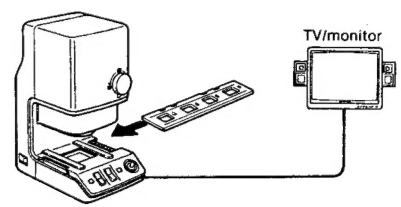
This section explains the procedure for displaying film on the TV screen. This unit accepts film under 35 mm.

1 **Turn on the power of this unit and the TV.**
The picture appears on the screen after about 4 seconds.

Note
When you turn on the power, the light source may not light up if the fluorescent tube protection circuit functions.
In such case, turn off the power, then turn on again after about 5 seconds.

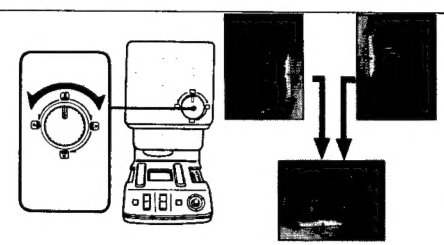


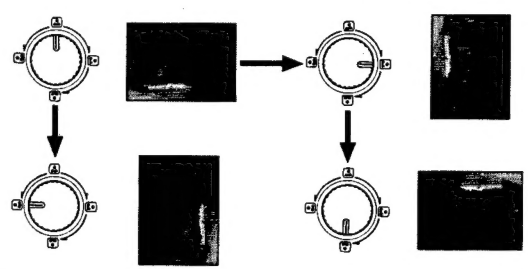
2 **Attach the film carrier (for strip film or mounted film) to the carrier guide of this unit.**



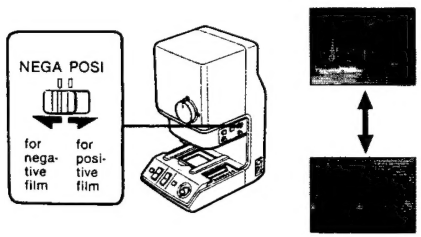
3 **Adjust the angle of the picture.You can adjust the angle within 270°.**

Rotate the angle rotating dial.



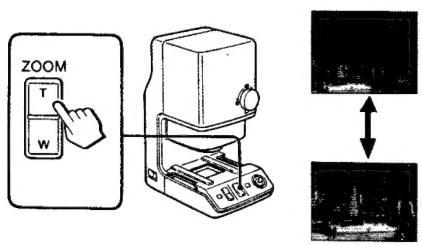


4 **Set the NEGA/POSI (negative/positive) switch.**

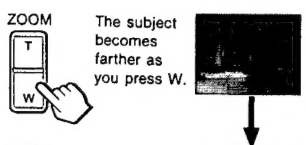


5 **Press ZOOM button (T or W).**

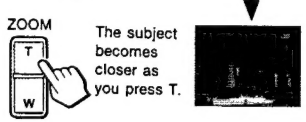
Note
While pressing the ZOOM button (also a few seconds after), automatic focus functions.



To make the subject appear farther away
Press W (wide).

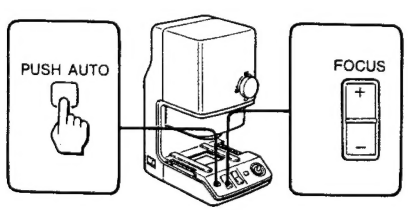


To make the subject appear closer
Press T (telephoto).



6 **Adjust the focus.**
Keep the PUSH AUTO button pressed until the picture is in focus.

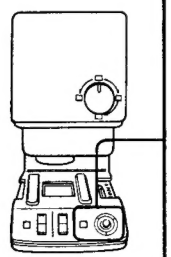
To focus manually
The automatic focus may not function depending on the kind of the film you are using. In such case, adjust the focus with the FOCUS +/– button.



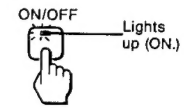
If the colour or brightness is not normal
Turn off the power, then after a few seconds, turn it on again.

To trim the unnecessary part of the picture
Move the film carrier to adjust the position of the picture, then press the ZOOM button to adjust the size.

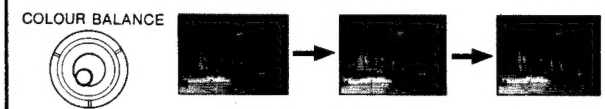
How to Change the Colour Balance



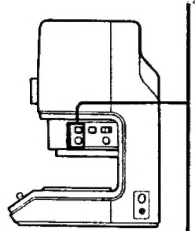
1 **Press the ON/OFF button.**



2 **Adjust with the COLOUR BALANCE control.**

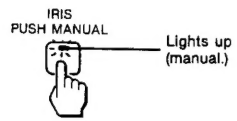


Advanced Operation



How to Adjust the Brightness

1 **Press the IRIS PUSH MANUAL button.**



2 **Adjust with the CLOSE/OPEN control.**

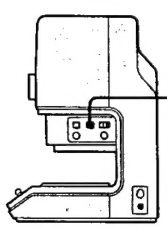
(For negative film. The effect is opposite for positive film.)

You can adjust for inadequate brightness to a certain extent, even if it was due to under exposure when the picture was taken.

Notes on the iris adjustment

This unit automatically adjusts the iris using the brightest part of the object that the lens is focused on. In the following cases, the automatic iris may not function. In such cases, adjust it manually.

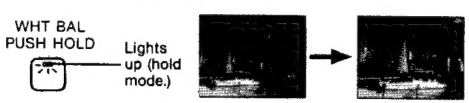
- The film on the film carrier is not placed properly, and the light has hit the light source directly.
- The picture has changed due to zooming or trimming.
- The original film was extremely over or under exposed.
- The original film has too much contrast.



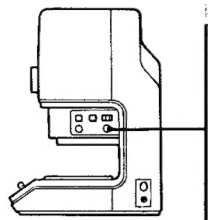
How to Hold the White Balance Level

When you zoom the picture, the white balance level may change. To avoid such change, use this function.

Press the WHT BAL PUSH HOLD button.



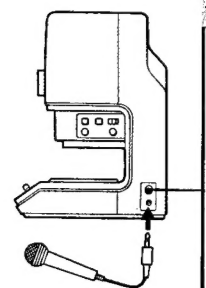
The white balance level does not change when you press the ZOOM button to change the size of the picture.



How to Adjust the Colour

Adjust with the COLOUR control.

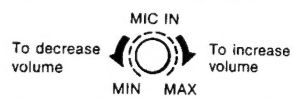
To make the colour deeper, turn to the right.
To make the colour paler, turn to the left.
If you turn the control to the left end, the colour turns to black and white.



To Insert Sound Using a Microphone

1 **Connect the microphone to MIC IN (PLUG IN POWER) jack.**

2 **Adjust the volume with the MIC LEVEL control.**



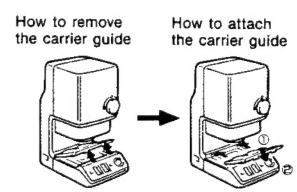
When this unit is connected to a TV/monitor and audio system, and the microphone is near the speaker, howling (noise) may occur. In such case, lower the volume of the TV and audio system.

To Display a Small Object or Photograph

To display small object or photograph, remove the carrier guide from this unit, then place the object or photograph directly. If placed on the carrier guide, the picture may not be in focus.

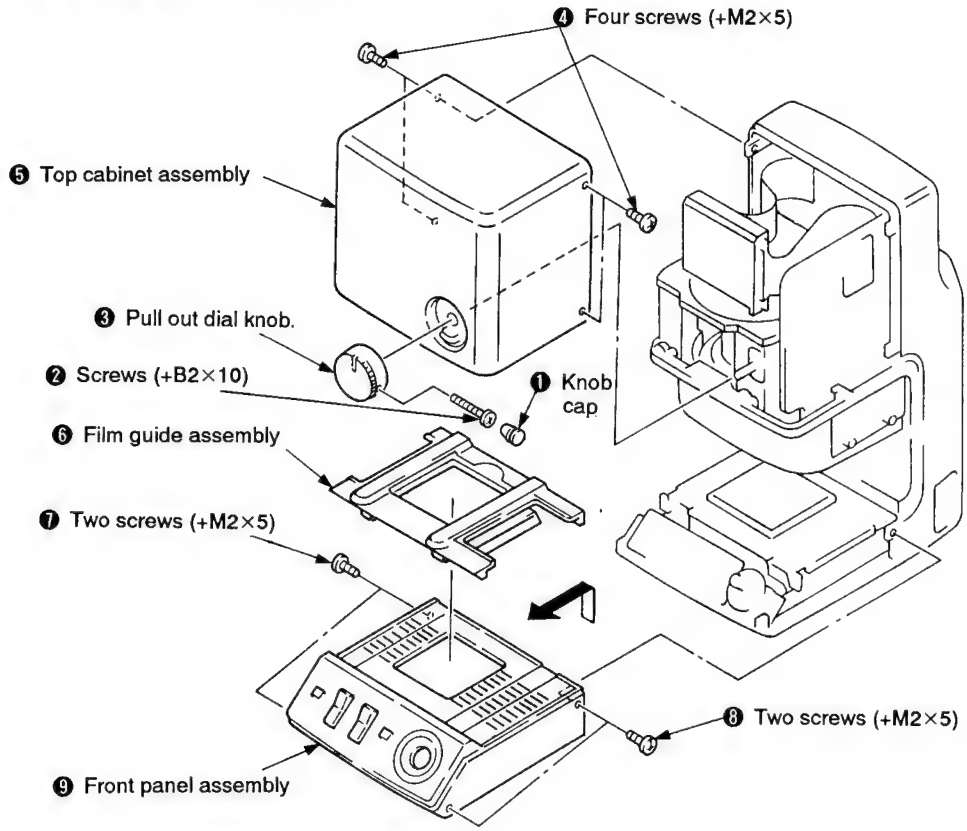
Notes

- Without the carrier guide, light hits the light source directly and may interfere with automatic iris function.
  In such case, adjust iris manually.
- Do not scratch the surface of the plate which covers the light source.

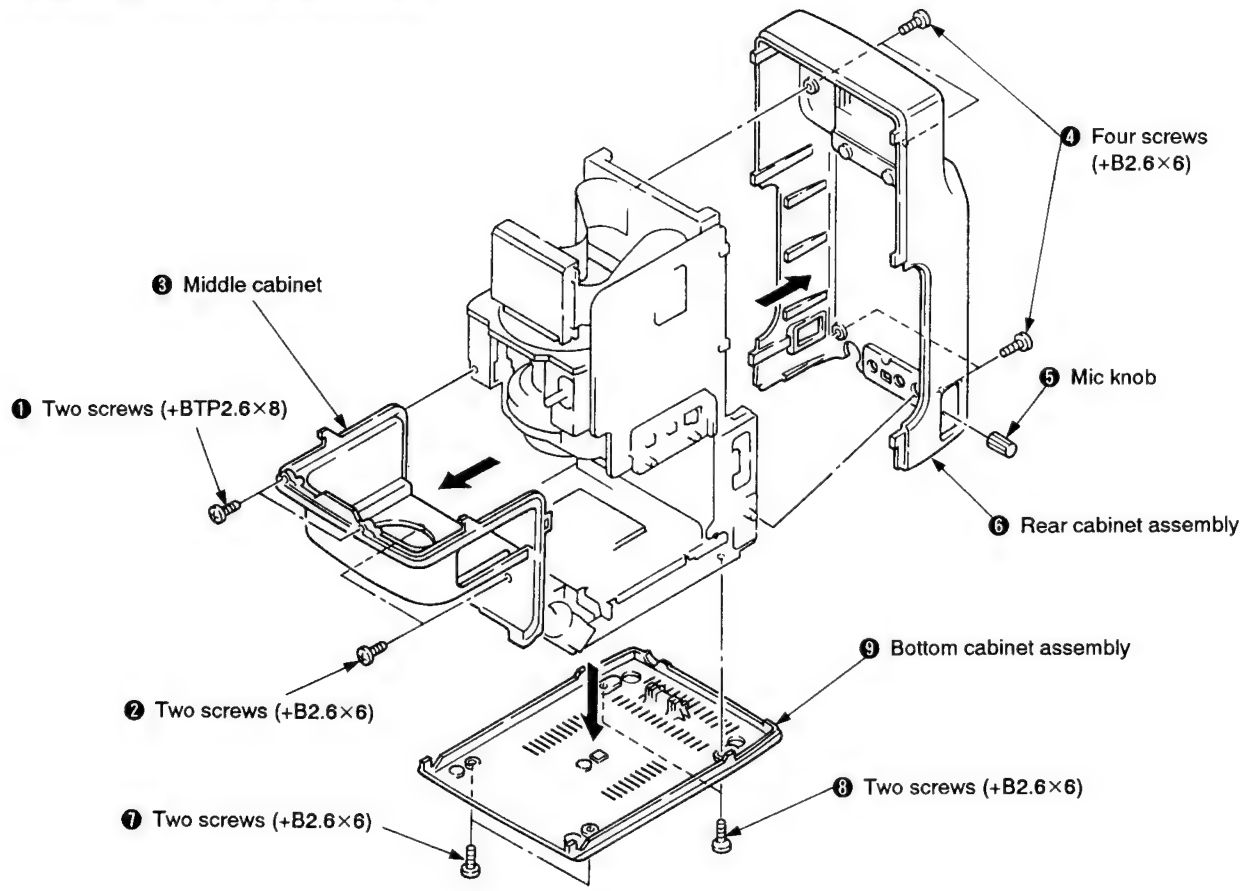


SECTION 2
DISASSEMBLY

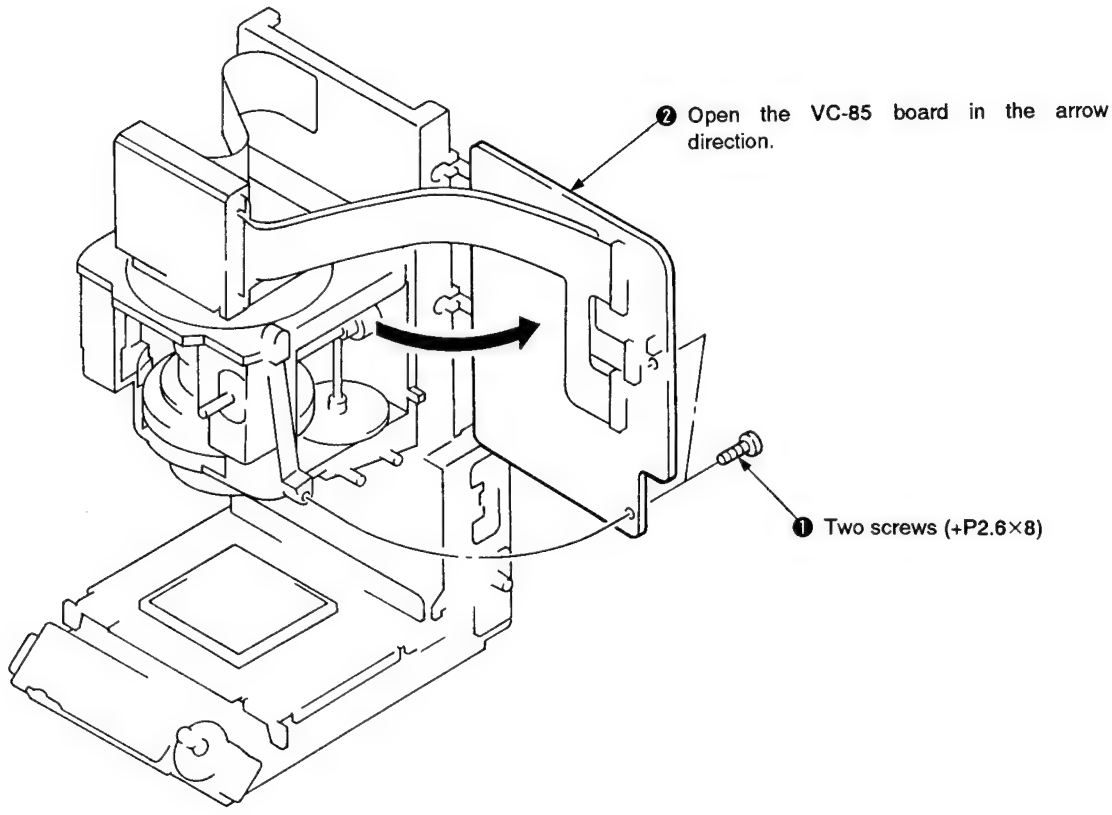
2-1. REMOVAL OF OUTER SECTION-1



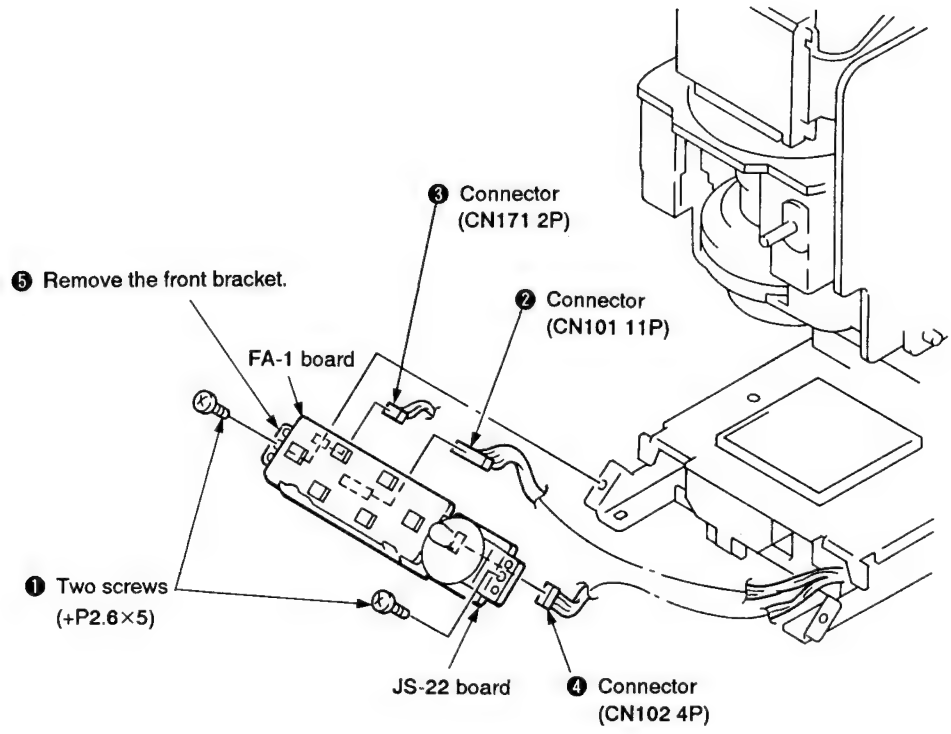
2-2. REMOVAL OF OUTER SECTION-2



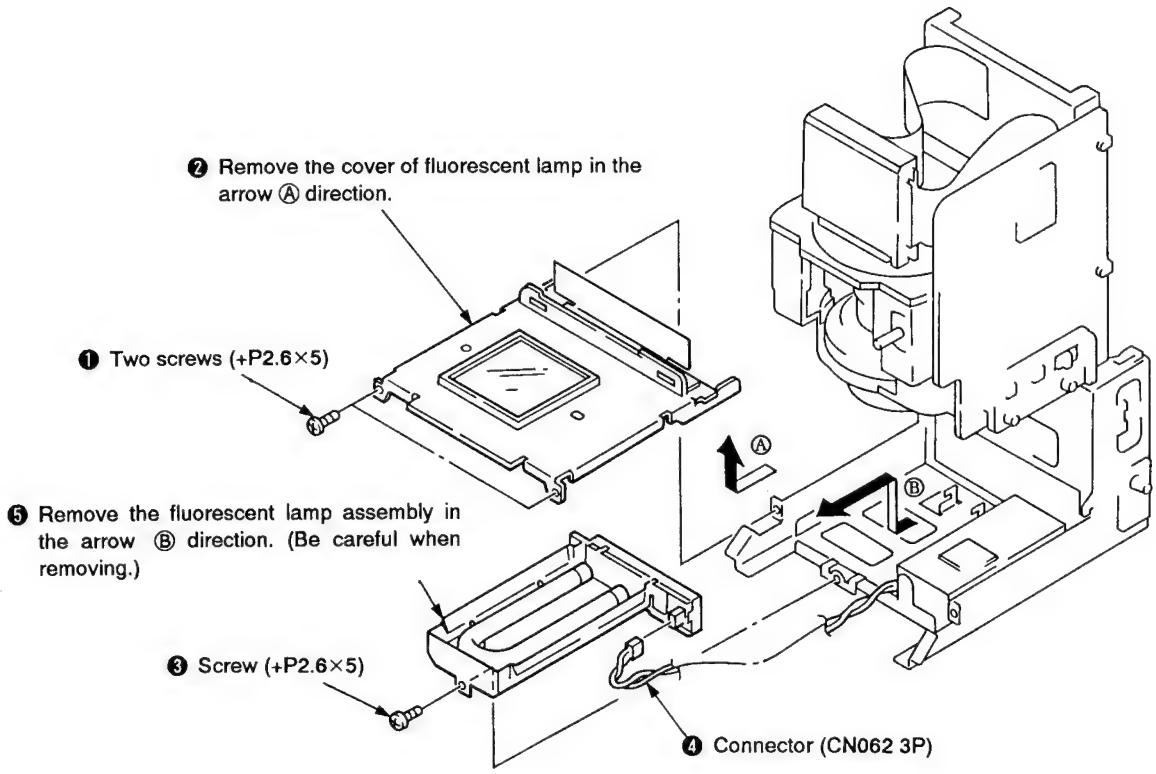
2-3. OPENING OF VC-85 BOARD



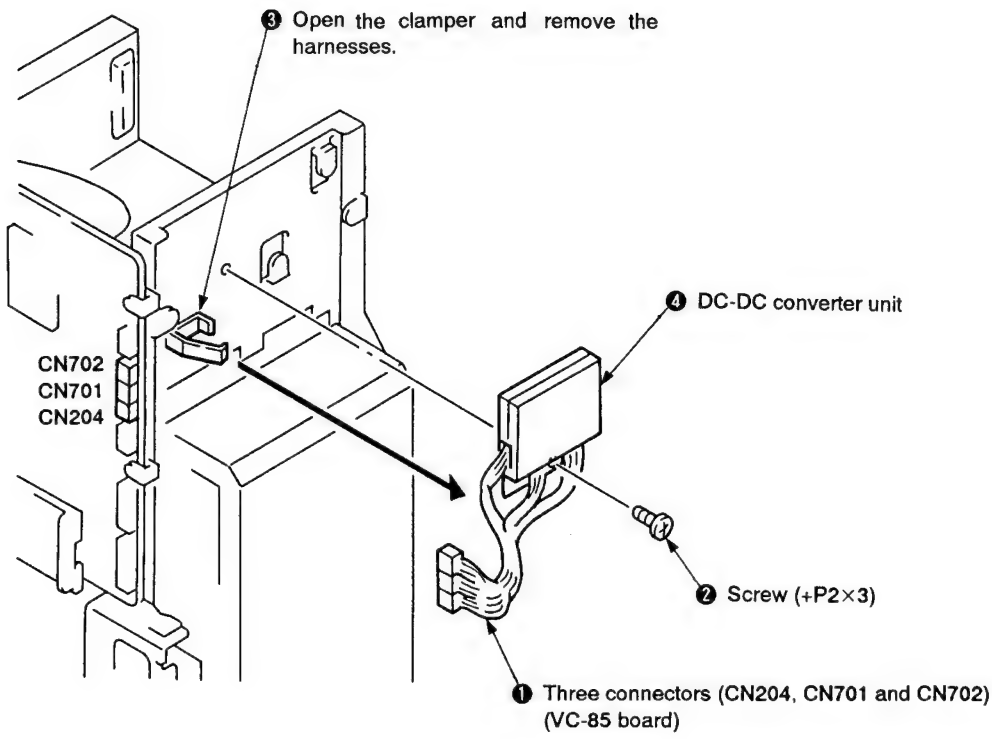
2-4. REMOVAL OF FRONT BRACKET (FA-1 AND JS-22 BOARDS)



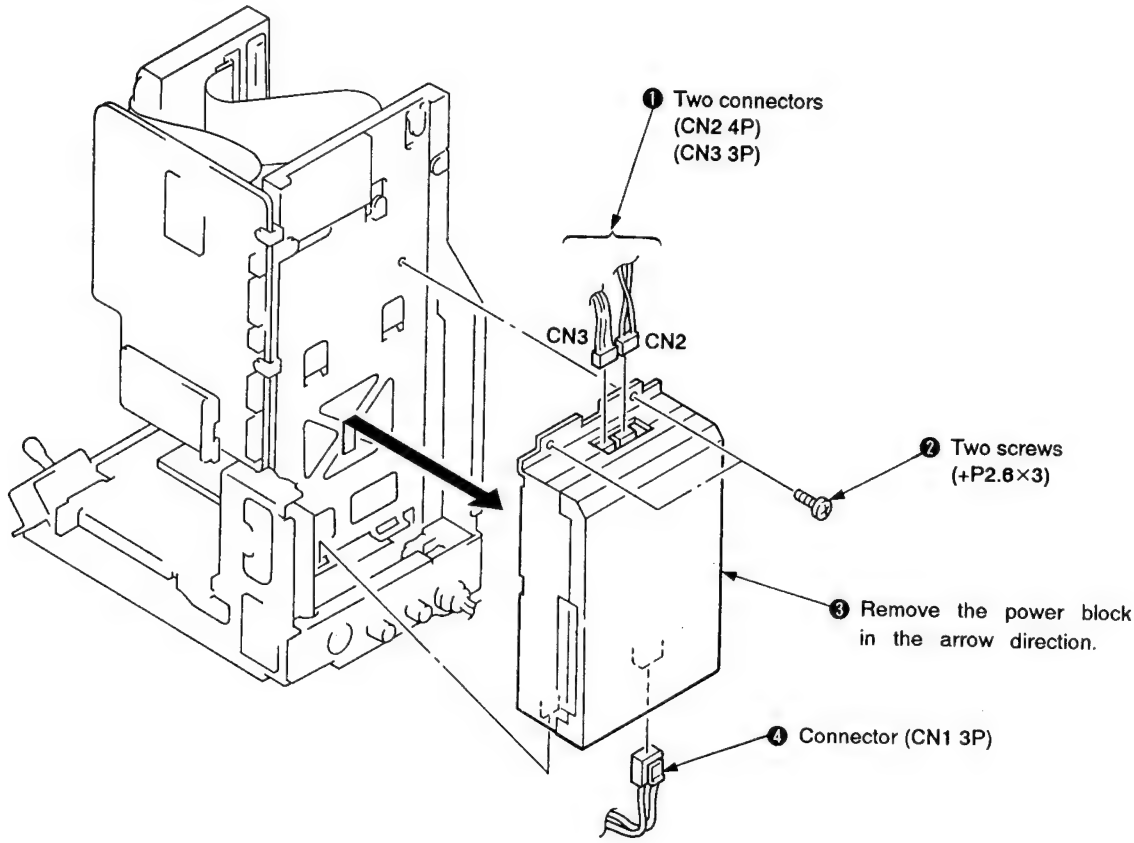
2-5. REMOVAL OF FLUORESCENT LAMP ASSEMBLY



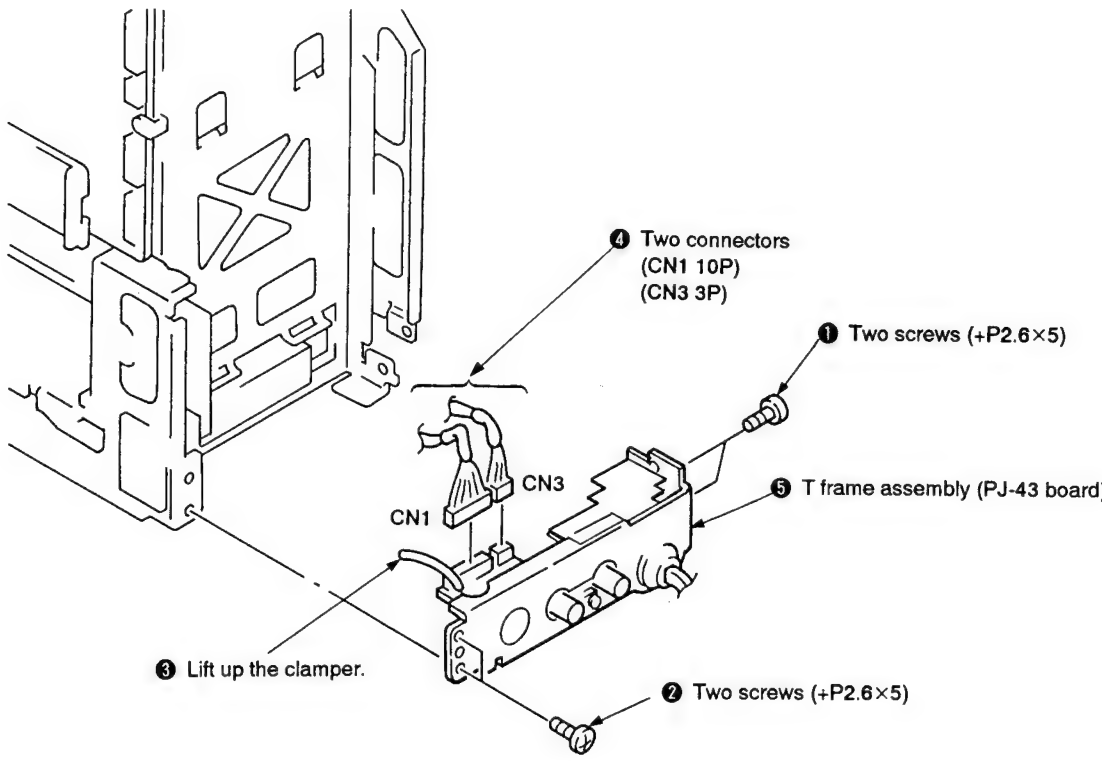
2-6. REMOVAL OF DC-DC CONVERTER UNIT



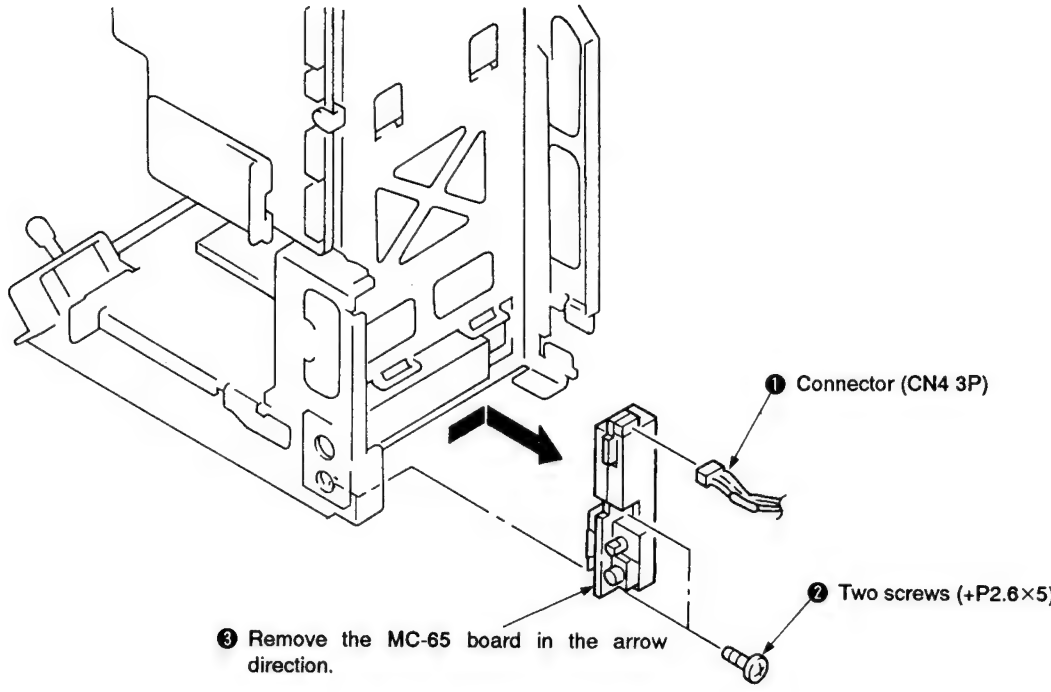
2-7. REMOVAL OF POWER BLOCK



2-8. REMOVAL OF T FRAME ASSEMBLY (PJ-43 BOARD)

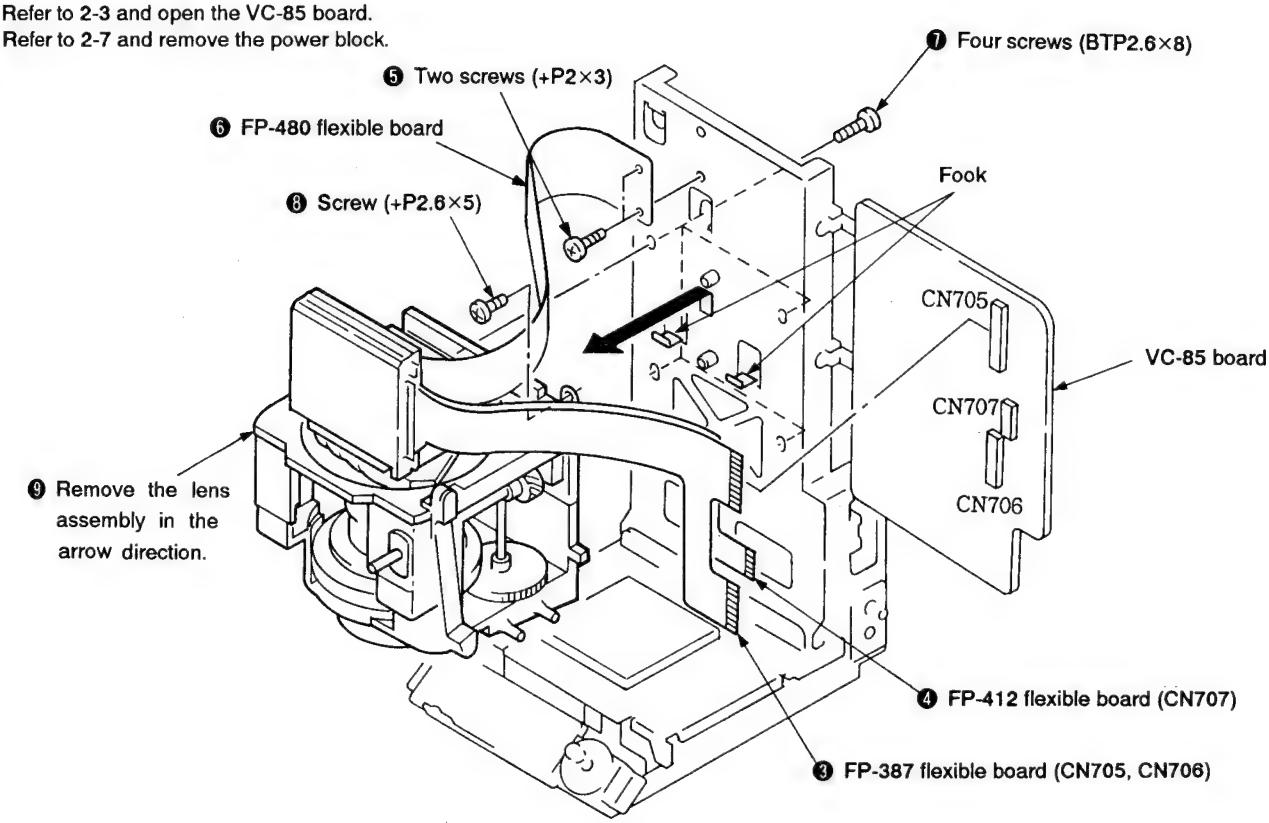


2-9. REMOVAL OF MC-65 BOARD

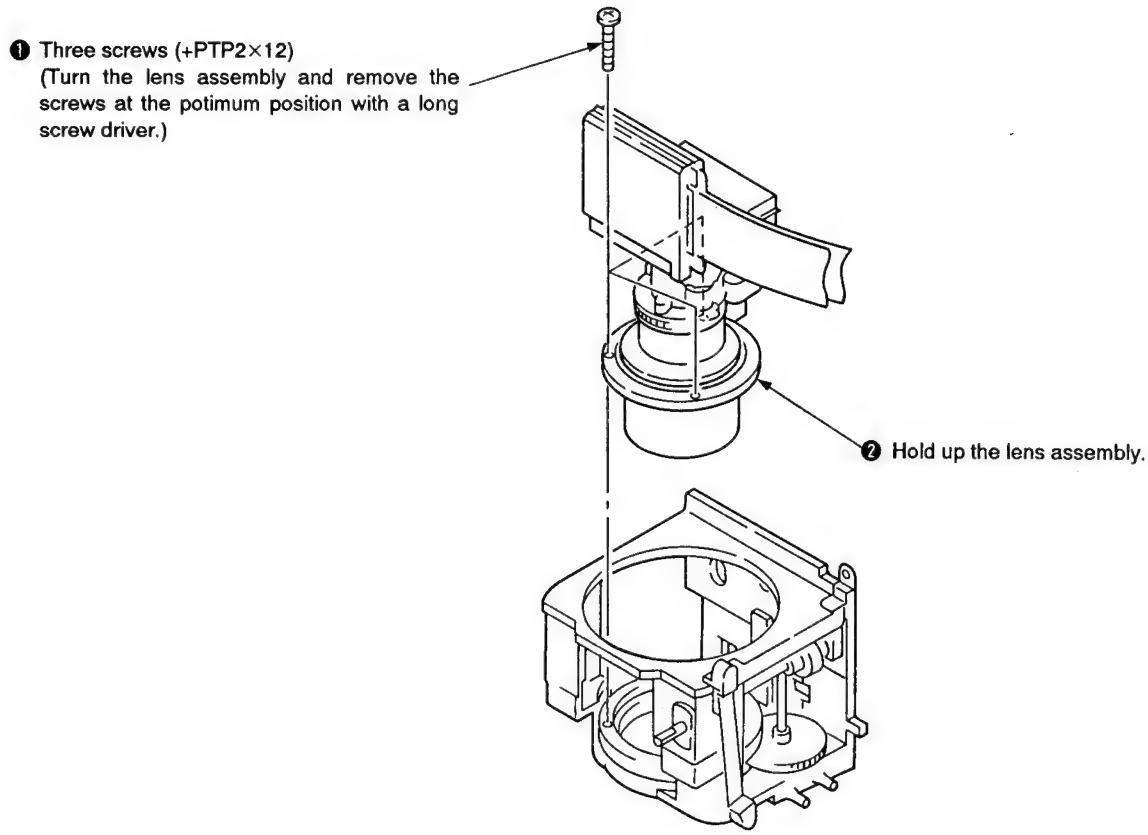


2-10. REMOVAL OF LENS ASSEMBLY

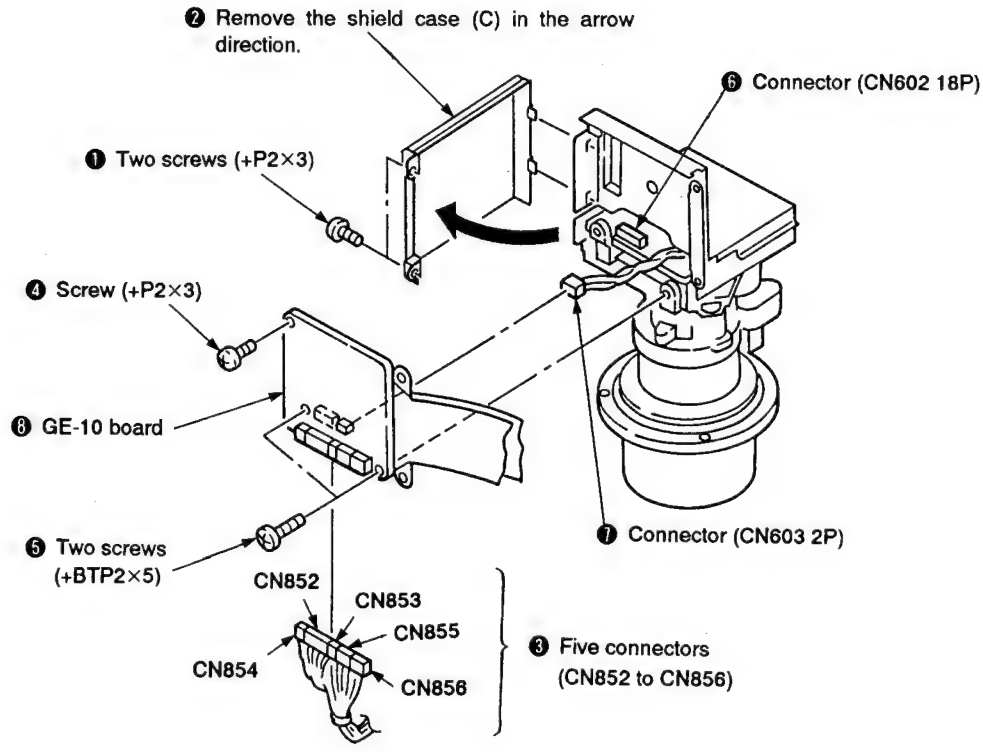
❶ Refer to 2-3 and open the VC-85 board.
❷ Refer to 2-7 and remove the power block.



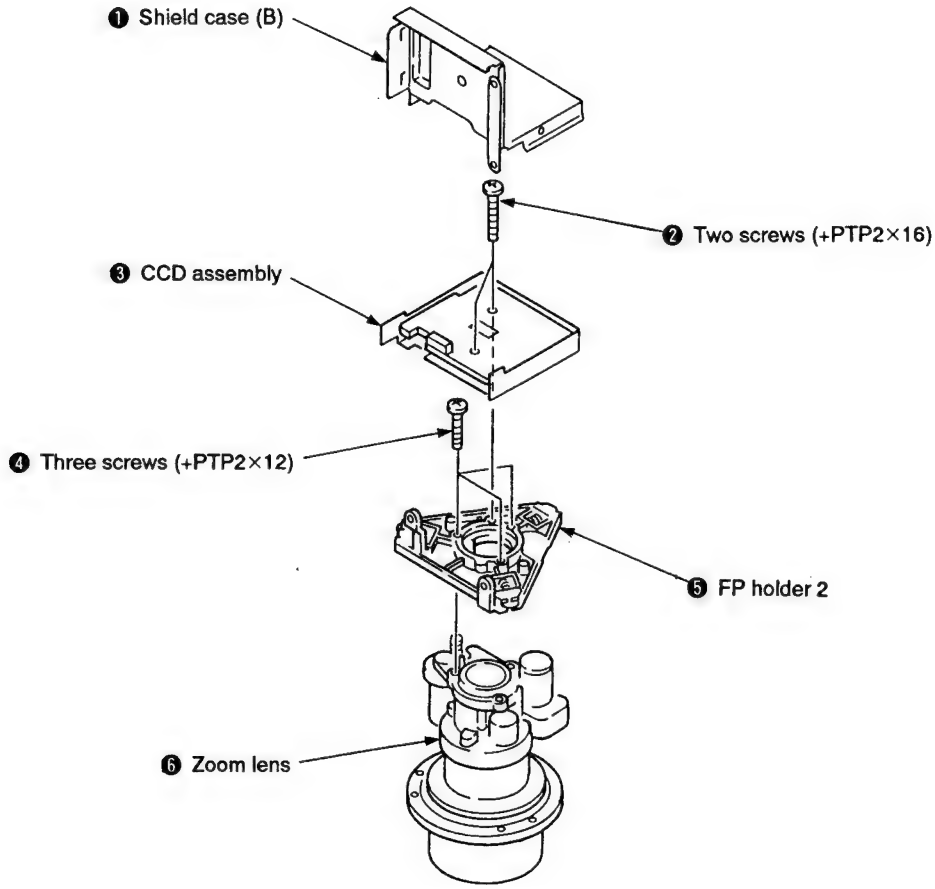
2-11. REMOVAL OF LENS ASSEMBLY



2-12. REMOVAL OF GE-10 BOARD

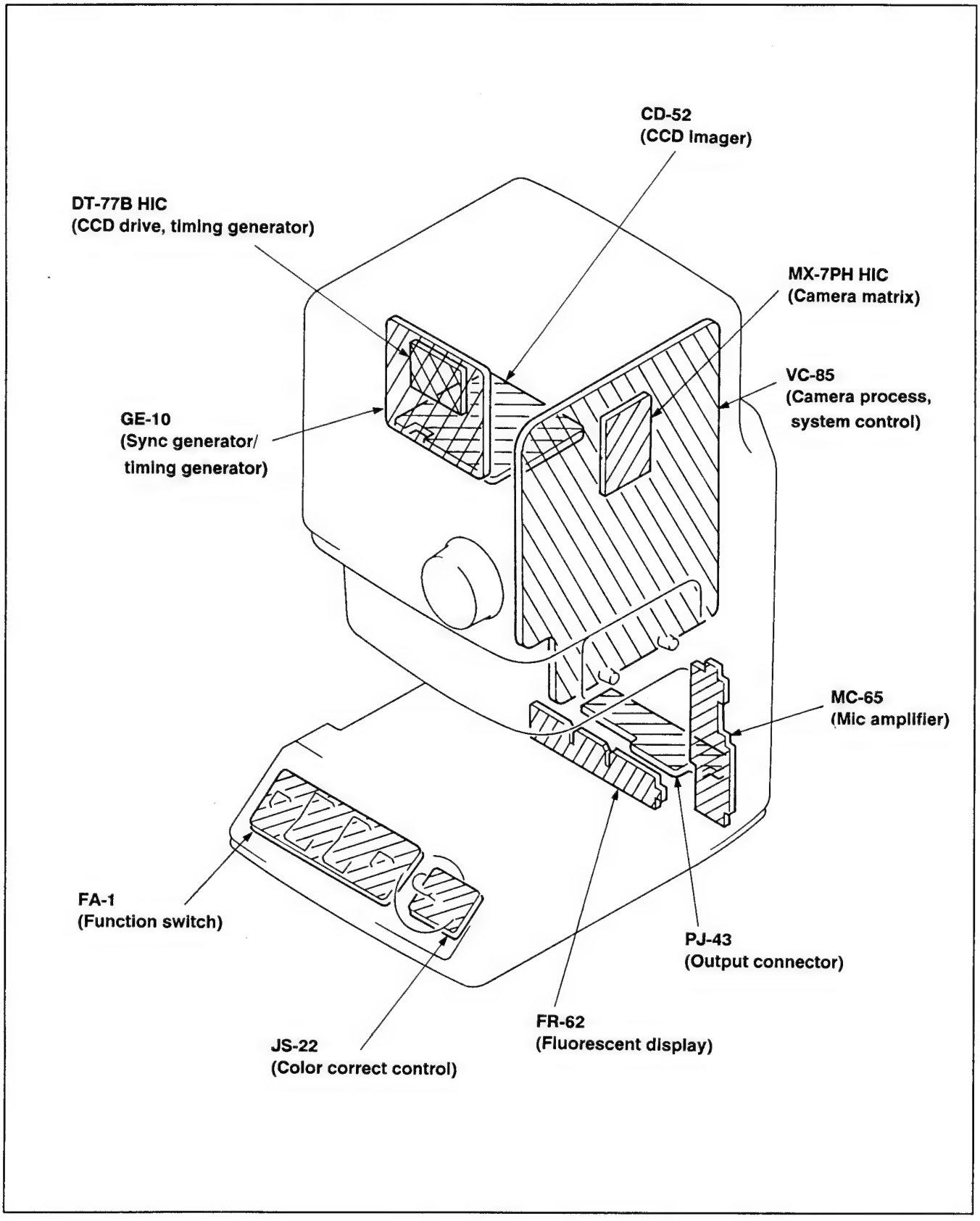


2-13. REMOVAL OF ZOOM LENS

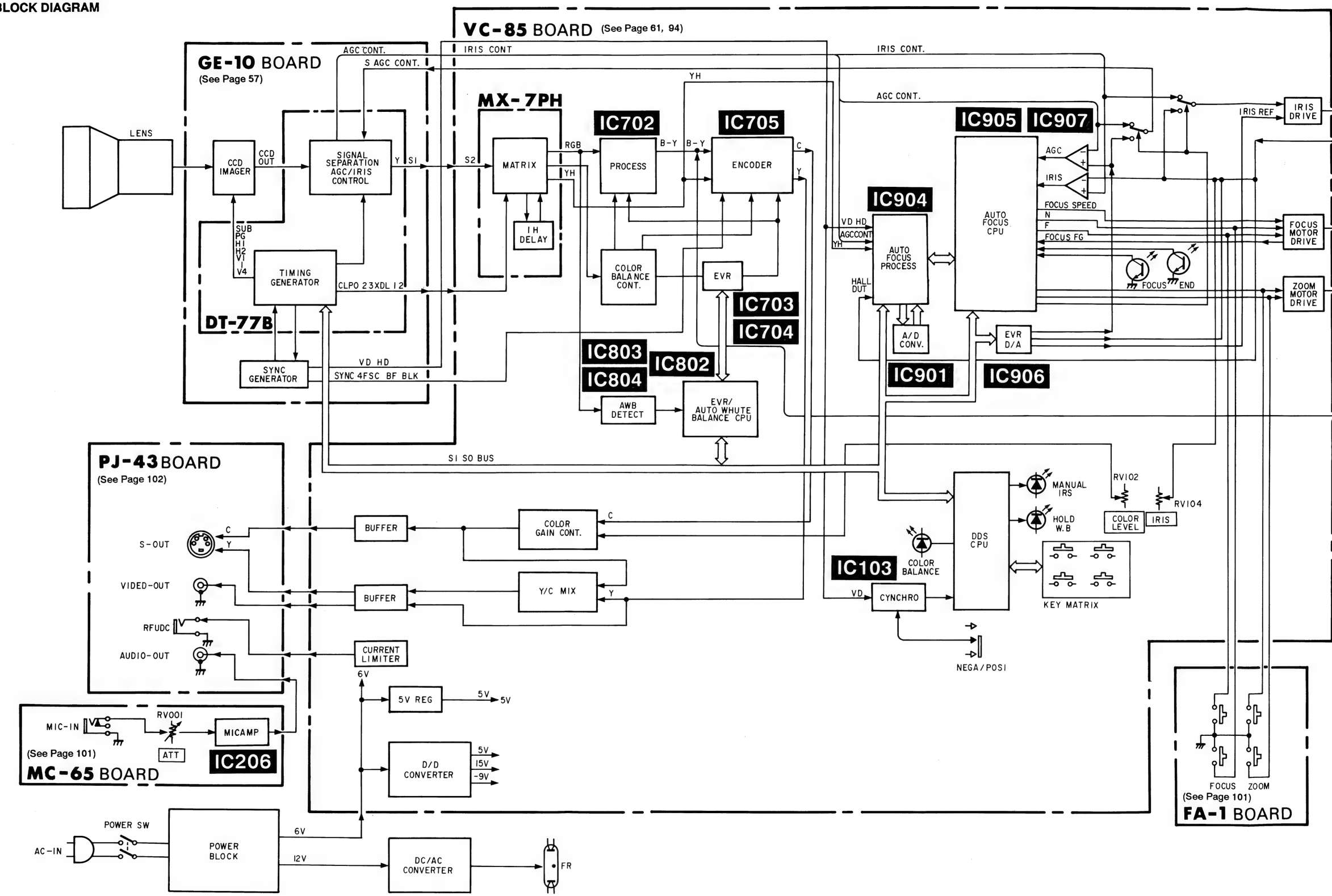


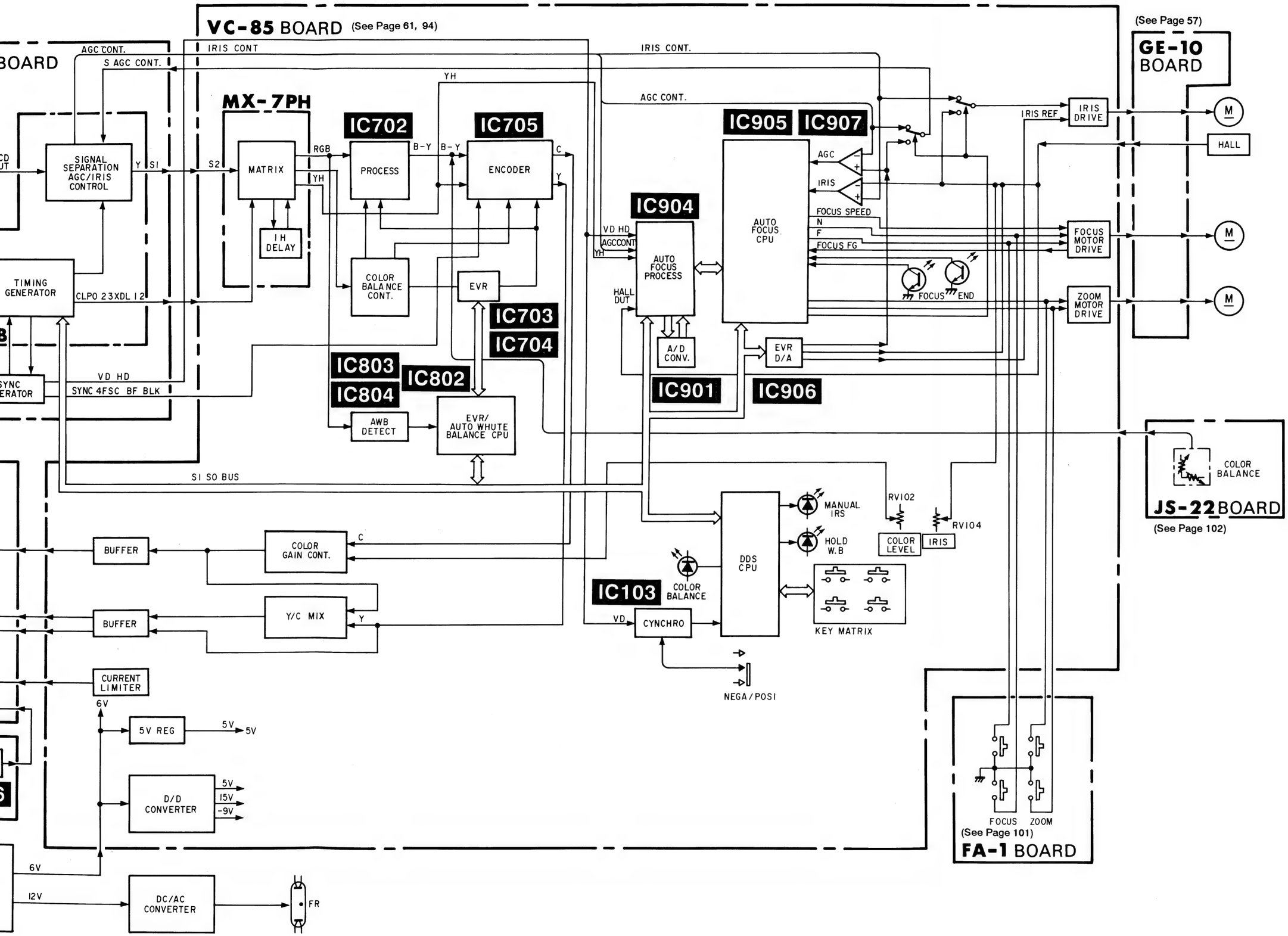
SECTION 3
DIAGRAMS

3-1. CIRCUIT BOARD LOCATION

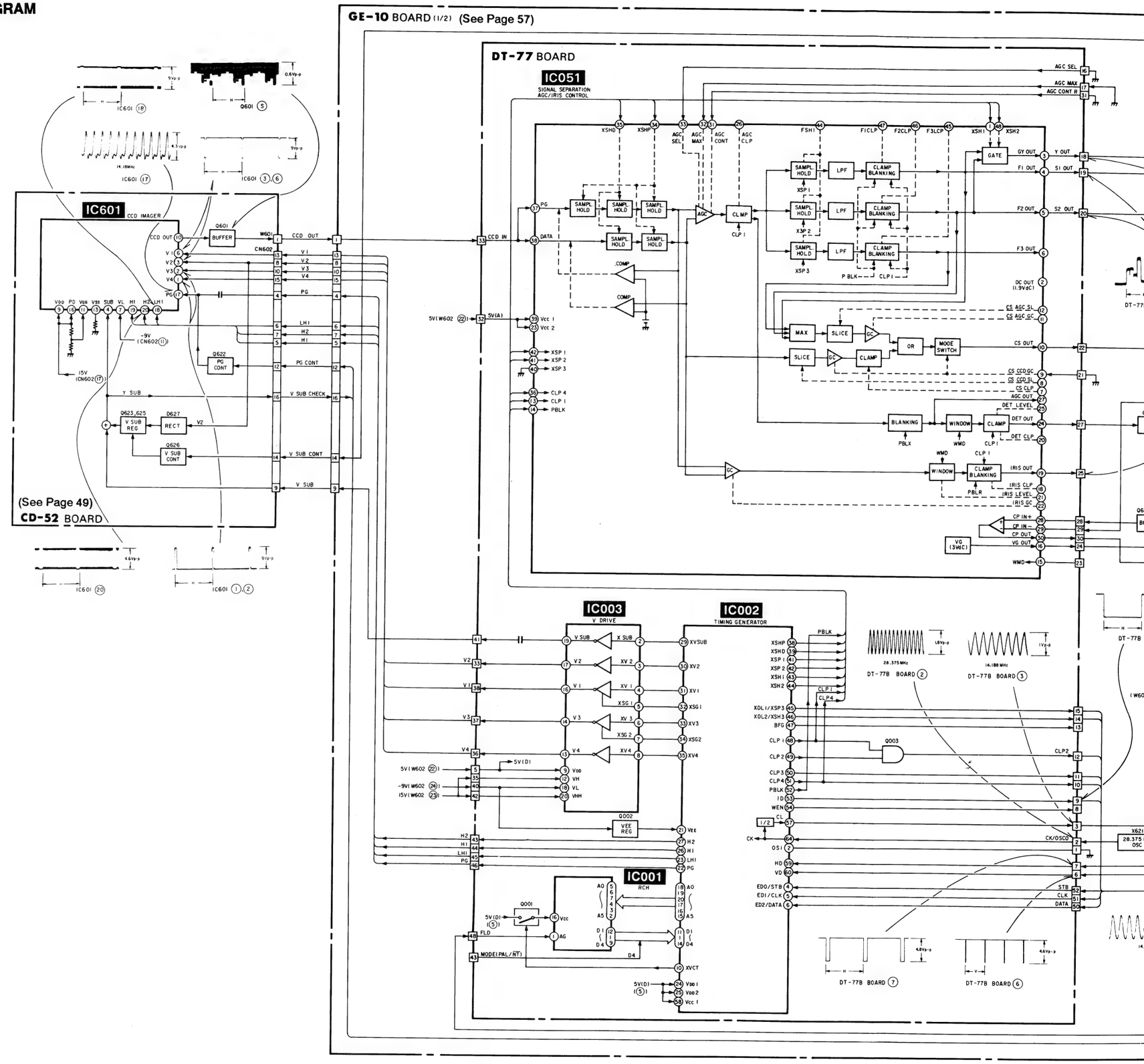


3-2. OVERALL BLOCK DIAGRAM




VC-85 BOARD (See Page 61, 94)
BOARD
AGC CONT.
S AGC CONT.
IRIS CONT
IRIS CONT.
AGC CONT.
YH
MX-7PH
IC702
IC705
IC905
IC907
SIGNAL SEPARATION AGC/IRIS CONTROL
Y
SI
S2
MATRIX
RGB
PROCESS
B-Y
B-Y
ENCODER
C
Y
YH
IH DELAY
IC904
AUTO FOCUS CPU
AGC
IRIS
FOCUS SPEED
N
F
FOCUS FG
VD HD
AGCCONT
YH
AUTO FOCUS PROCESS
HALL DUT
FOCUS
END
TIMING GENERATOR
CLPO 23XDL 12
COLOR BALANCE CONT.
EVR
IC703
IC704
A/D CONV.
EVR D/A
IC901
IC906
VD HD
SYNC 4FSC BF BLK
IC803
IC804
IC802
AWB DETECT
EVR/ AUTO WHUTE BALANCE CPU
SI SO BUS
(See Page 57)
GE-10 BOARD
IRIS REF
IRIS DRIVE
HALL
FOCUS MOTOR DRIVE
ZOOM MOTOR DRIVE
M
COLOR BALANCE
JS-22 BOARD
(See Page 102)
BUFFER
COLOR GAIN CONT.
C
BUFFER
Y/C MIX
Y
CURRENT LIMITER
6V
5V REG
5V
5V
D/D CONVERTER
5V
15V
-9V
6V
12V
DC/AC CONVERTER
FR
IC103
COLOR BALANCE
VD
CYNCHRO
DDS CPU
MANUAL IRS
HOLD W.B
RV102
RV104
COLOR LEVEL
IRIS
KEY MATRIX
NEGA/POSI
FOCUS
ZOOM
(See Page 101)
FA-1 BOARD

3-3. CAMERA (1) BLOCK DIAGRAM



DIAGRAM

GE-10 BOARD (1/2) (See Page 57)

DT-77 BOARD

IC601 CCD IMAGER

(See Page 49)
CD-52 BOARD

IC051
SIGNAL SEPARATION AGC/IRIS CONTROL

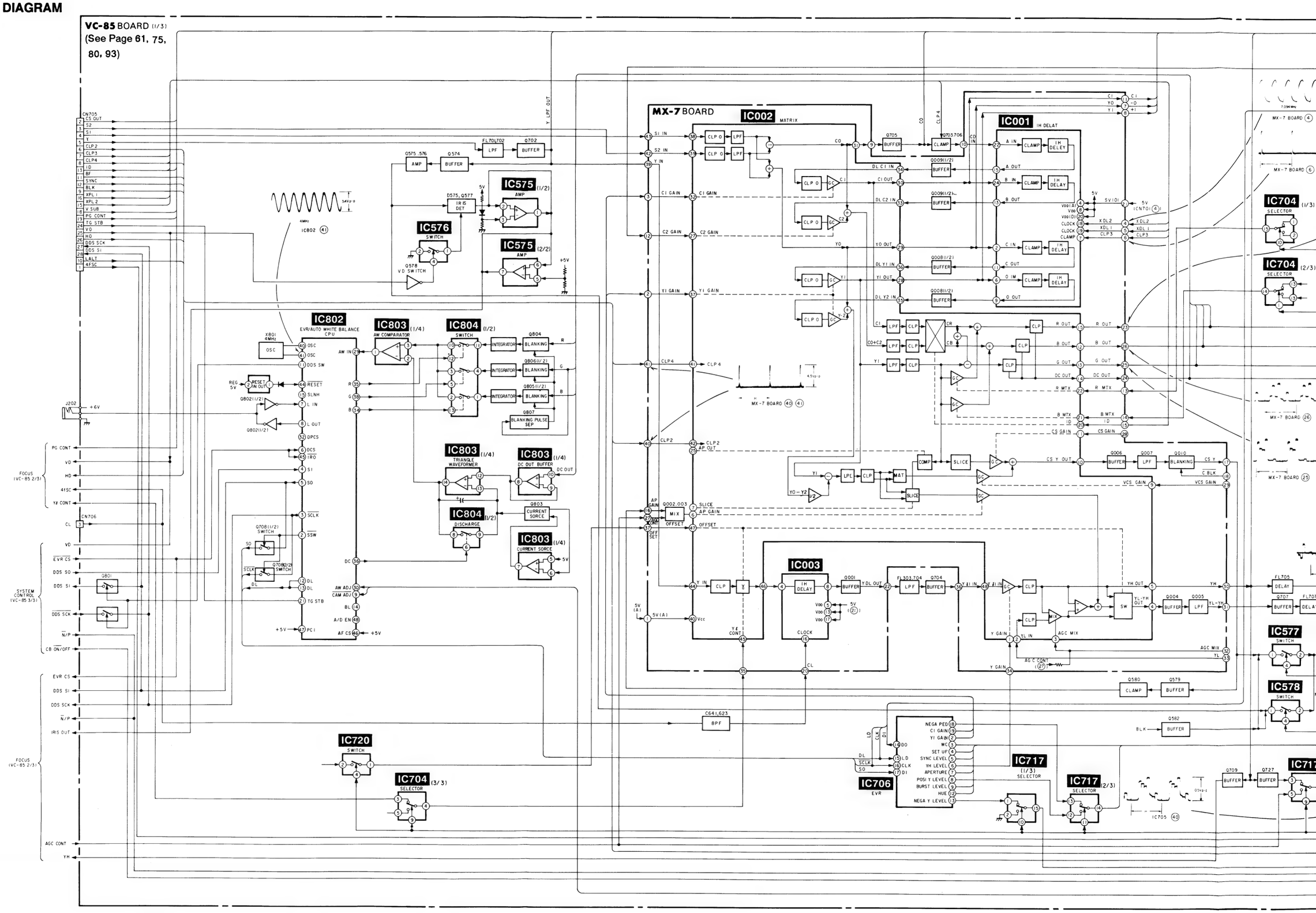
IC003
V DRIVE

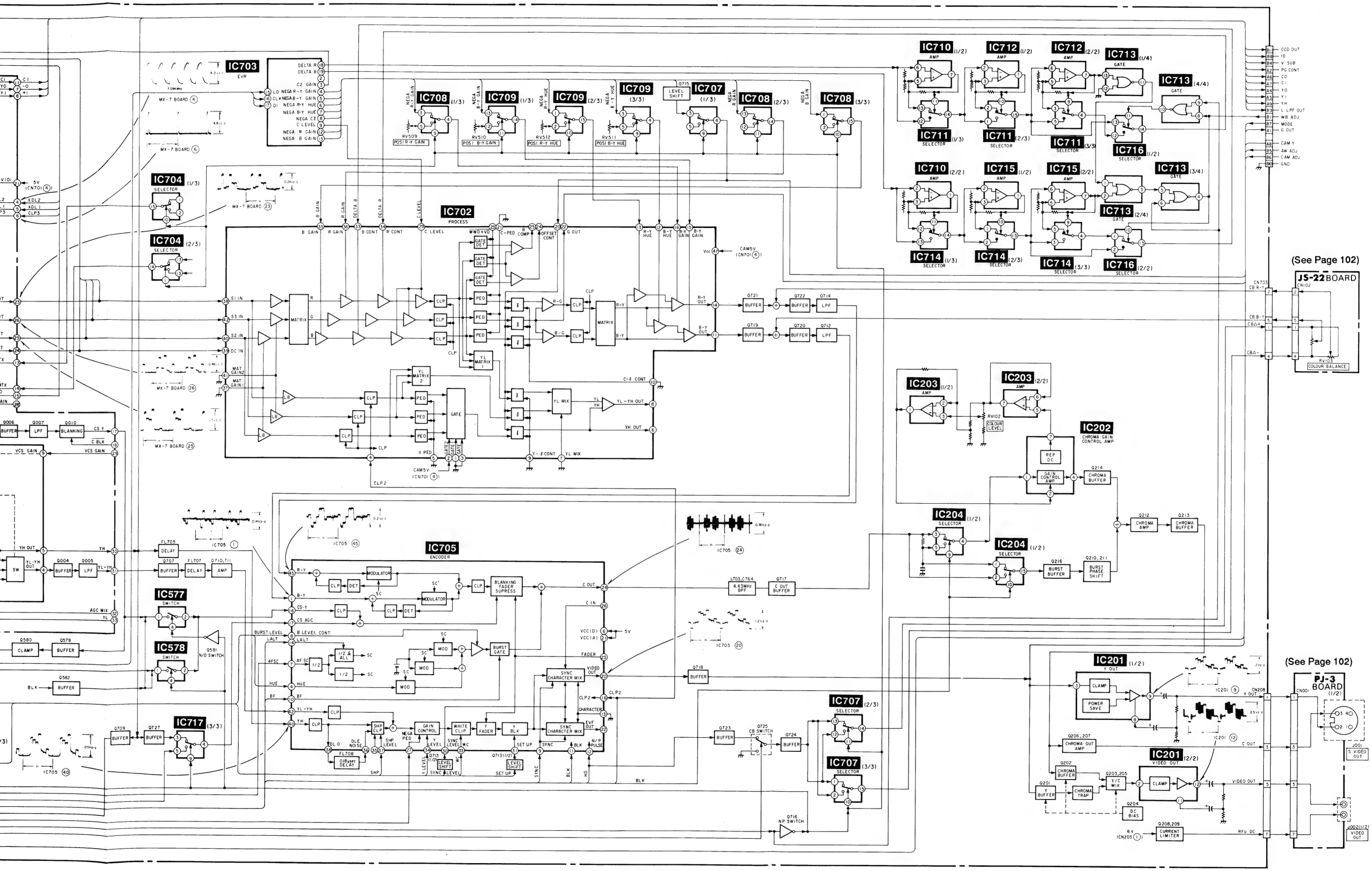
IC002
TIMING GENERATOR

IC001
RCH

IC621
SYNC GENERATOR

3-4. CAMERA (2) BLOCK DIAGRAM

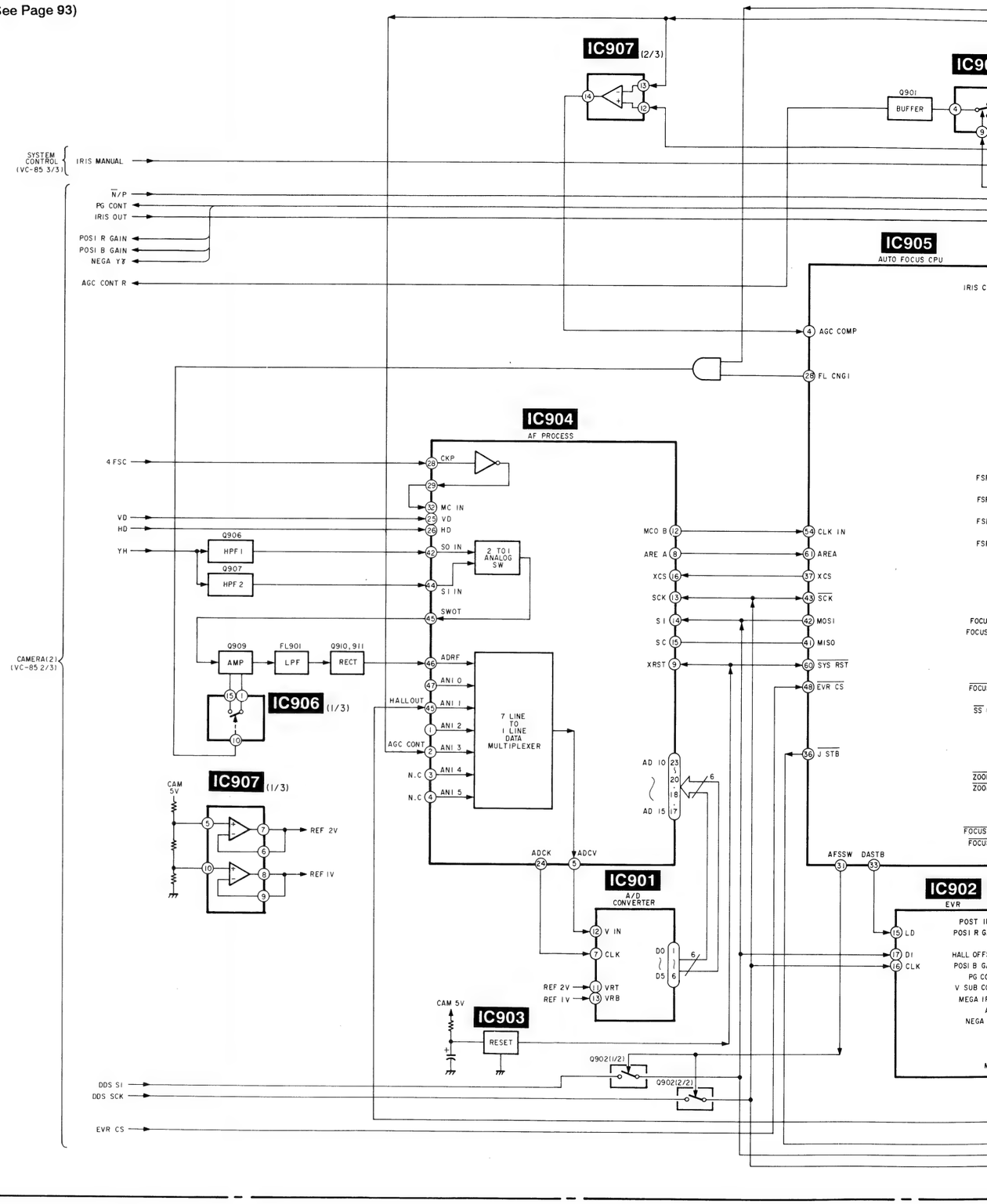


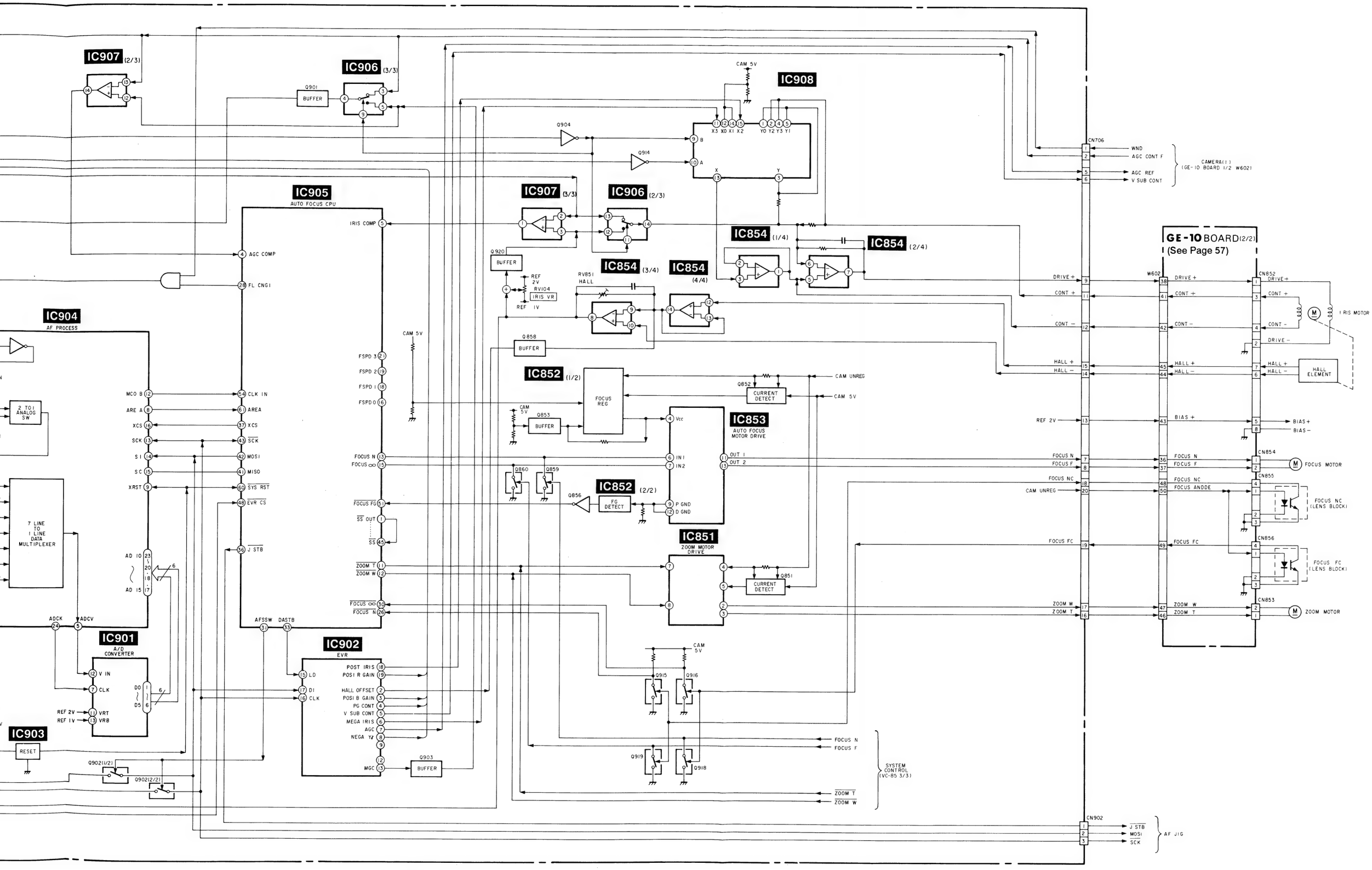

IC703 EVR
IC702 PROCESS
IC705 ENCODER
IC704 (1/3) SELECTOR
IC704 (2/3) SELECTOR
IC577 SWITCH
IC578 SWITCH
IC717 (3/3)
IC708 (1/3)
IC709 (1/3)
IC709 (2/3)
IC709 (3/3)
IC707 (1/3)
IC708 (2/3)
IC708 (3/3)
IC710 (1/2) AMP
IC712 (1/2) AMP
IC712 (2/2) AMP
IC713 (1/4) GATE
IC713 (4/4) GATE
IC711 (1/3) SELECTOR
IC711 (2/3) SELECTOR
IC711 (3/3) SELECTOR
IC716 (1/2) SELECTOR
IC710 (2/2) AMP
IC715 (1/2) AMP
IC715 (2/2) AMP
IC713 (3/4) GATE
IC713 (2/4) GATE
IC714 (1/3) SELECTOR
IC714 (2/3) SELECTOR
IC714 (3/3) SELECTOR
IC716 (2/2) SELECTOR
IC203 (1/2) AMP
IC203 (2/2) AMP
IC202 CHROMA GAIN CONTROL AMP
IC204 (1/2) SELECTOR
IC204 (1/2) SELECTOR
IC707 (2/3) SELECTOR
IC707 (3/3) SELECTOR
IC201 (1/2) Y OUT
IC201 (2/2) VIDEO OUT
(See Page 102)
JS-22 BOARD
PJ-3 BOARD (1/2)
MX-7 BOARD 4
MX-7 BOARD 6
MX-7 BOARD 23
MX-7 BOARD 26
MX-7 BOARD 25
DELTA R
DELTA B
C2 GAIN
LD NEGA R-Y GAIN
CLK NEGA B-Y GAIN
DI NEGA R-Y HUE
NEGA B-Y HUE
NEGA C/C LEVEL
NEGA R GAIN
NEGA B GAIN
RV509 POSI R-Y GAIN
RV510 POSI B-Y GAIN
RV512 POSI R-Y HUE
RV511 POSI B-Y HUE
LEVEL SHIFT
B GAIN
R GAIN
DELTA B
DELTA R
C LEVEL
B CONT
R CONT
C-PED
R COMP
OFFSET CONT
G OUT
R-Y HUE
B-Y HUE
R-Y GAIN
B-Y GAIN
CAM 5V (CN701 4)
S1 IN
S3 IN
S2 IN
DC IN
MAT GAIN2
MAT GAIN1
MATRIX
YL MATRIX 1
YL MATRIX 2
YL MIX
C-Y CONT
YL-YH OUT
YH OUT
Y PED
GATE
CLP
PED
R-Y OUT
B-Y OUT
BUFFER
LPF
CLP2
BURST LEVEL
LALT
4FSC
AF SC
HUE
BF
YL-YH
YH
B-Y
CS-Y
CS AGC
B LEVEL CONT
MODULATOR
DET
BLANKING FADER SUPRESS
BURST GATE
MOD
SYNC CHARACTER MIX
VIDEO OUT
FADER
C OUT
C IN
VCC(D) 5V
VCC(A) 5V
CHARACTER
EVF OUT
SHP CLP
SHP LEVEL
GAIN CONTROL
WHITE CLIP
Y FADER
Y BLK
SET UP
SYNC
BLK
H/D
N/P PULSE
SYNC LEVEL
WC
Y LEVEL
DL 0
DLE NOISE
FL708 018μsec DELAY
FL705 DELAY
FL707 DELAY
Q710,711 AMP
Q707 BUFFER
Q004 BUFFER
Q005 LPF
Q006 BUFFER
Q007 LPF
Q010 BLANKING
CS-Y
C BLK
VCS GAIN
SW
YL-YH OUT
YH OUT
AGC MIX
YL
Q580 CLAMP
Q579 BUFFER
Q581 N/D SWITCH
Q582 BUFFER
BLK
Q709 BUFFER
Q727 BUFFER
Q721 BUFFER
Q722 BUFFER
Q714 LPF
Q719 BUFFER
Q720 BUFFER
Q712 LPF
Q723 BUFFER
Q725 CB SWITCH
Q724 BUFFER
Q716 NP SWITCH
Q718 BUFFER
L703,C764 4.43MHz BPF
Q717 C OUT BUFFER
RV102 COLOUR LEVEL
REF DC
GAIN CONTROL AMP
Q214 CHROMA BUFFER
Q212 CHROMA AMP
Q213 CHROMA BUFFER
Q216 BURST BUFFER
Q210,211 BURST PHASE SHIFT
Q206,207 CHROMA OUT AMP
Q202 CHROMA BUFFER
Q203,205 Y/C MIX
Q201 Y BUFFER
CHROMA TRAP
Q204 DC BIAS
Q208,209 CURRENT LIMITER
CLAMP
POWER SAVE
RV103 COLOUR BALANCE
CCD OUT
ID
V SUB
PG CONT
CO
CI
YO
YI
YH
L LPF OUT
WB ADJ
MODE
G OUT
CAM Y
AW ADJ
CAM ADJ
GND
CB R-Y
CB B-Y
CB△+
CB△-
Y OUT
C OUT
VIDEO OUT
RFU DC
S VIDEO OUT
VIDEO OUT
5V (CN701 4)
6V (CN203 1)

3-5. FOCUS BLOCK DIAGRAM

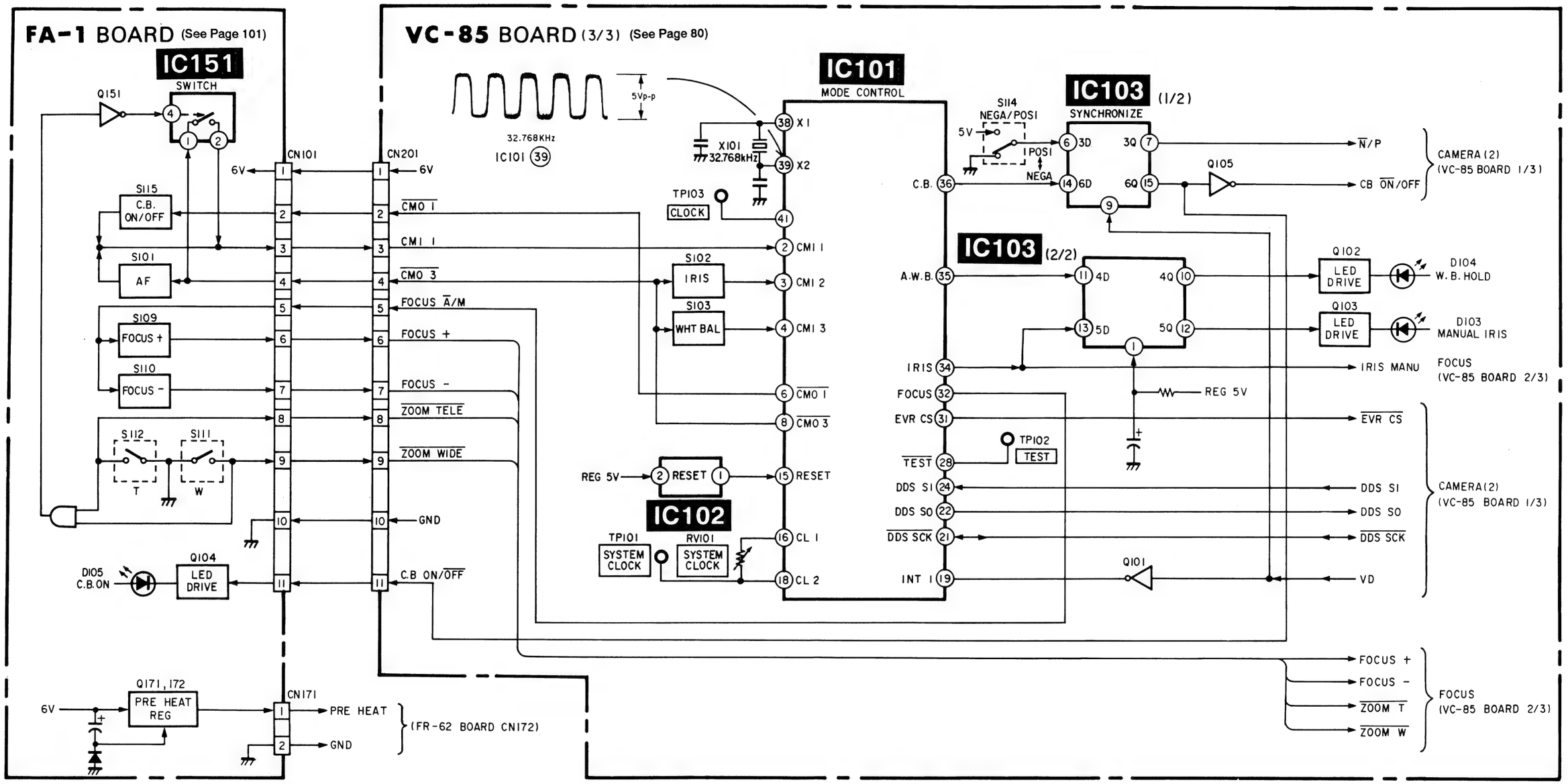
VC-85 BOARD (2/3)

(See Page 93)




IC907 (2/3)
IC906 (3/3)
Q901
BUFFER
IC908
CAM 5V
Q904
Q914
X3 X0 X1 X2
Y0 Y2 Y3 Y1
B
A
X
Y
CN706
WND
AGC CONT F
AGC REF
V SUB CONT
CAMERA(1)
(GE-10 BOARD 1/2 W602)
IC905
AUTO FOCUS CPU
IRIS COMP
AGC COMP
FL CNG1
IC907 (3/3)
IC906 (2/3)
IC854 (1/4)
IC854 (2/4)
IC854 (3/4)
IC854 (4/4)
Q920
REF 2V
RV104
IRIS VR
REF 1V
RV851
HALL
Q858
GE-10 BOARD(2/2)
(See Page 57)
W602
CN852
DRIVE +
CONT +
CONT −
DRIVE −
HALL +
HALL −
HALL ELEMENT
IRIS MOTOR
IC904
AF PROCESS
2 TO 1 ANALOG SW
7 LINE TO 1 LINE DATA MULTIPLEXER
MCO B
ARE A
XCS
SCK
SI
SC
XRST
CLK IN
AREA
XCS
SCK
MOSI
MISO
SYS RST
EVR CS
J STB
AD 10
AD 15
ADCK
ADCV
AFSSW
DASTB
IC852 (1/2)
FOCUS REG
CAM UNREG
CAM 5V
Q852
CURRENT DETECT
Q853
BUFFER
IC853
AUTO FOCUS MOTOR DRIVE
Vcc
IN1
IN2
OUT 1
OUT 2
P GND
D GND
FSPD 3
FSPD 2
FSPD 1
FSPD 0
FOCUS N
FOCUS ∞
FOCUS FG
SS OUT
SS
ZOOM T
ZOOM W
Q860
Q859
Q856
IC852 (2/2)
FG DETECT
IC851
ZOOM MOTOR DRIVE
Q851
REF 2V
FOCUS F
FOCUS NC
FOCUS ANDDE
FOCUS FC
BIAS +
BIAS −
CN854
CN855
CN856
CN853
FOCUS MOTOR
FOCUS NC (LENS BLOCK)
FOCUS FC (LENS BLOCK)
ZOOM MOTOR
IC901
A/D CONVERTER
V IN
CLK
VRT
VRB
REF 2V
REF 1V
IC902
EVR
LD
DI
CLK
POST IRIS
POSI R GAIN
HALL OFFSET
POSI B GAIN
PG CONT
V SUB CONT
MEGA IRIS
AGC
NEGA Y
MGC
Q903
BUFFER
IC903
RESET
Q902(1/2)
Q902(2/2)
Q915
Q916
Q919
Q918
SYSTEM CONTROL (VC-85 3/3)
CN902
J STB
MOSI
SCK
AF JIG

3-6. SYSTEM CONTROL BLOCK DIAGRAM



3-7. DESCRIPTION OF SYSTEM CONTROL BLOCK

The system control block consists of the three micro processors listed below.

- DDS Micro processor μPD7508BGB
- EVR Micro processor MC68HC05N4FU
- AF Micro processor MC68HC05C4FU

3-7-1. DDS Micro Processor μPD7508BGB (IC101 on VC-85 board)

1. Description of functions

1) Internal data communication control
2) Key matrix reading
   (White balance, focus mode, iris mode, color balance mode)

2. Terminal functions and input/output levels (μPD7508BGB)

Pin No.	Signal Name	I/O	Function and Input/Output Level
1	CMI 0	I	Key matrix input signal. Normally "H" 1V period "L" pulse when there is key input
2	CMI 1	I	
3	CMI 2	I	
4	CMI 3	I	
5	$\overline{\text{CMO 0}}$	O	Key matrix output signal 1V period "L" pulse
6	$\overline{\text{CMO 1}}$	O	
7	$\overline{\text{CMO 2}}$	O	
8	$\overline{\text{CMO 3}}$	O	
9	———	–	———
10	———	–	———
11	———	–	———
12	———	–	———
13	———	–	———
14	———	–	———
15	RESET	I	Reset input, Normally "L"
16	CL 1	I	System clock oscillation terminal, 330 kHz when operating
17	V_{DD}	–	Power supply input terminal
18	CL 2	O	System clock oscillation terminal.
19	INT 1	I	Interrupting input by camera VD, 1V period "H" pulse
20	GND	–	———
21	$\overline{\text{DDS SCK}}$	I/O	Serial communication serial clock input/output, V period "L" pulse row
22	DDS SO	O	Serial communication data output, V period "H" pulse row
23	———	–	———
24	DDS SI	I	Serial communication data input, V period "L" pulse row
25	———	–	———
26	POWER	I	5V power supply detection, "H" when power is on
27	———	–	———
28	$\overline{\text{TEST}}$	I	Test mode input, Normally "H"
29	———	–	———
30	———	–	———
31	$\overline{\text{EVR CS}}$	O	Chip select signal for EVR micro processor, 1V period "L" pulse
32	———	O	———
33	FOCUS	O	Focus mode output, Manual mode "H"
34	IRIS	O	Iris mode output, Manual mode "H"
35	WHITE BALANCE	O	White balance mode output, Hold mode "H"
36	COLOR BALANCE	–	Color balance mode output, Color balance on "H"
37	Vss	I	GND
38	X1	O	Crystal oscillation circuit input for clock, 32.768 kHz
39	X2	–	Crystal oscillation circuit output for clock, 32.768 kHz
40	———	–	———
41	———	–	———
42	———	–	———
43	———	–	———
44	———	–	———

3-7-2. EVR Micro Processor MC68HC05N4FU (IC802 on VC-85 board)

1. Description of functions.

1) EVR control
2) Automatic white balance control

2. Terminal functions and input/output levels (MC68HC05N4FU)

Pin No.	Signal Name	I/O	Function and Input/Output Level
1	———	–	———
2	$\overline{SSW}$	O	"H" only when communicating with serial switchover D/A converter, V period "H" pulse
3	$\overline{SCLK}$	O	Serial clock output, V period "L" pulse row
4	SI	I	Serial data input, V period "H" pulse row
5	SO	O	Serial data output, V period "L" pulse row
6	$\overline{EVR\ CS}$	I	Communication demand from DDS, V period "L" pulse
7	L IN	I	LANC input, L: 0, H: 1, V period "H" pulse row
8	L OUT	O	LANC output, L: 0, H: 1, V period "H" pulse row
9	$\overline{CAM\ ADJ}$	I	NORMAL/ADJUST switchover, Normally "H". "L" during adjustment
10	———	–	———
11	SSW	O	Serial signal switchover, V period "L" pulse
12, 13	LD	O	Data load command for EVR (IC703, IC706), V period "H" pulse
14	———	–	———
15	IRIS I/O	I	IN DOOR/OUT DOOR discrimination input, H: IN DOOR, L: OUT DOOR
16	———	–	———
17	V_{DD}	–	Connected to REG 5V
18	GND	–	GND
19	———	–	———
20	PAL/$\overline{NTSC}$	I	Broadcasting method selection, L: NTSC, H: PAL
21	TG STB	–	Timing generator strobe signal
22	GND	–	———
23	GND	–	———
24, 25	GND	–	———
26	GND	–	———
27	GND	–	———
28	CAM 5V	I	Camera power rising is observed. L: CAM OFF, H: CAM ON
29	AW IN	I	AWS A/D timer is stopped. Pattern drive interruption, Normally 2V period pulse
30	AW ADJ	O	AWS preset data is taken in. Normally "L", "H" during auto white balance adjustment
31	———	–	———
32	———	–	———
33	———	–	———
34	S3SW	O	AWB measurement signal selection, 3V period "H" pulse
35	S2SW	O	AWB measurement signal selection, 3V period "H" pulse
36	DISCHG	O	Capacitor reset pulse for generating timer measurement lamp voltage, V period "H" pulse
37	———	–	———
38	S1SW	O	AWB measurement signal selection, 3V period "H" pulse
39	———	–	———
40	OSC2	O	Built-in inverter output for oscillation. Oscillation frequency: 4 MHz.
41	OSC1	I	Built-in inverter input for oscillation.
42	V_{DD}	–	Connected to REG 5V.
43	———	–	———
44	$\overline{RESET}$	–	Normally "H", "L" during reset
45	$\overline{IRQ}$	–	Connected to $\overline{EVR\ CS}$ signal, V period "L" pulse
46	———	–	Connected to V_{DD}
47	———	–	Connected to V_{DD}
48	———	–	———

3-7-3. AF Micro Processor MC68HC05C4FU (IC905 on VC-85 board)

1. Description of functions

1) AF control
2) Power focus
3) Zoom motor drive

2. The auto focus system in this unit

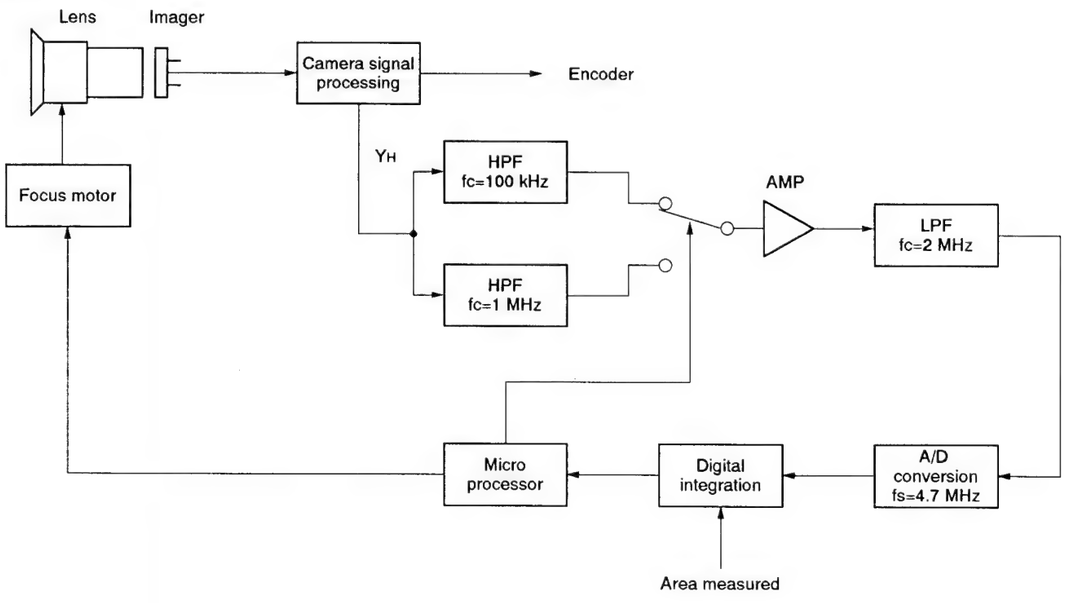
(A-AF:Image processing method)

Subjects the high frequency components of the video signal (actually the luminance signal) to micro processor processings at TTL without utilizing the external sensor, and controls the focus.

3. Outline of operations

Extracts the high frequency components of 100k to 2 MHz and 1M to 2 MHz from the luminance signal Y, and subjects these components to digital integration with every field.

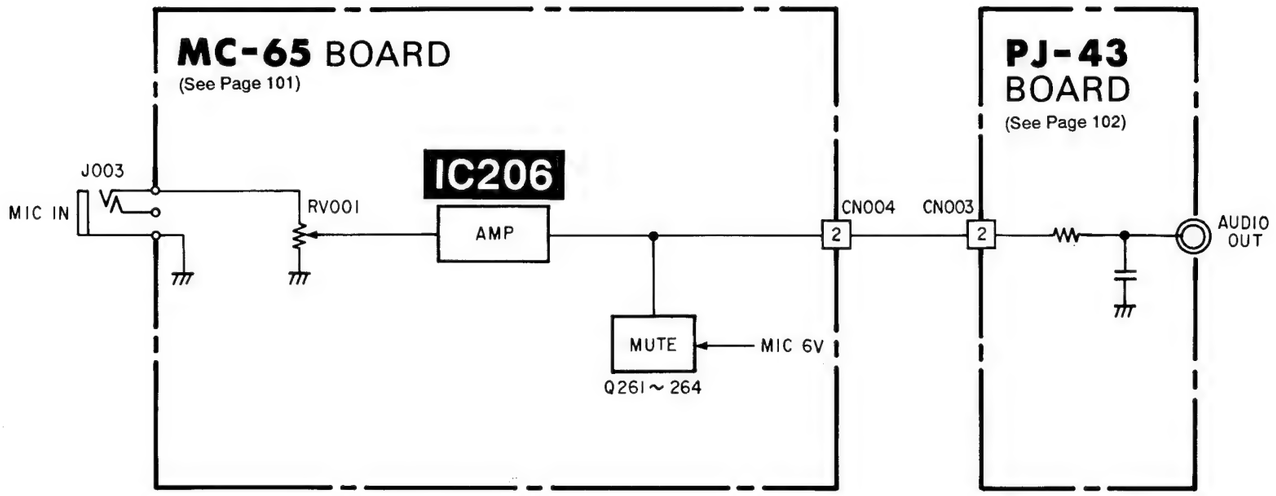
This integration value known as the evaluation value. And it is used as information for auto focusing performed by controlling the focus ring while searching for the evaluation value peak, based on the concept:[When in focus → Clearer image edges → Increase in image high frequency components → Increase in evaluation value].



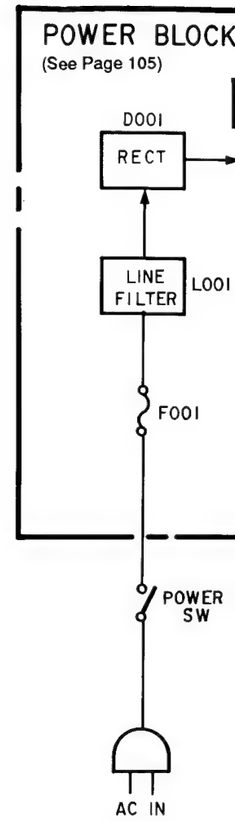
4. Terminal functions and input/output levels (MC68HC05C4FU)

Pin No.	Signal Name	I/O	Function and Input/Output Level
1	$\overline{SS}$ OUT	O	EVR data reading timing output (PD5 SS input), V period "L" pulse row
2	———	–	———
3	———	–	———
4	AGC COMP	I	EE LOCK AGC comparater
5	IRIS COMP	I	EE LOCK IRIS comparater
6	———	–	———
7	———	–	———
8	———	–	———
9	———	–	———
10	———	–	———
11	$\overline{ZOOM\ T}$	O	Normally "H", "L" when the zoom motor is rotated to the TELE side
12	$\overline{ZOOM\ W}$	O	Normally "H", "L" when the zoom motor is rotated to the WIDE side
13	Focus N	O	Normally "L", "H" when the focus motor is rotated to the FAR side
14	———	–	———
15	Focucs F	O	Normally "L". "H" when the focus motor is rotated to the NEAR side
16	F SPD ϕ	O	Focus motor speed control signal 0 bit (LSB)
17	———	–	———
18	F SPD1	O	Focus motor speed control signal 1 bit
19	F SPD2	O	Focus motor speed control signal 2 bit
20	———	–	———
21	F SPD3	O	Focus motor speed control signal 3 bit (MSB)
22	———	–	———
23	Vss	–	Connected to GND
24	Vss	–	Connected to GND
25	———	–	———
26	$\overline{FOCUS\ NEAR}$	I	"L" at focus ring NEAR side
27	———	–	———
28	WEIGHTING	O	Amplifies the signal from AF switch.
29	———	–	———
30	$\overline{FOCUS\ FAR}$	I	"L" at focus ring FAR side
31	AF SSW	O	Timing output for bus switchovers, V period "H" pulse
32	———	–	———
33	DA STB	O	D/A converter for AF, For data latch, V period "H" pulse row
34	PAL/$\overline{NTSC}$	I	PAL/NTSC switchover
35	———	–	———
36	$\overline{J\ STB}$	O	Exterior display tool, For data latch, V period "L" pulse
37	XCS	O	Communication demand active "L" to IC904 CXD-1204, V period "L" pulse.
38	TEST	I	Connected to V_{DD}
39	———	–	———
40	MODE	I	Connected to V_{DD}
41	MISO	I/O	SPI MASTER: in SLAVE: out V period "H" pulse row
42	MOSI	I/O	SPI MASTER: out SLAVE: in V period "L" pulse row
43	$\overline{SCK}$	I/O	SPI SERIAL CLOCK V period "L" pulse row
44	———	–	———
45	$\overline{SS}$	I	V period "L" pulse row
46	———	–	———
47	———	–	———
48	$\overline{EVR\ CS}$	I	EVR data communication demand ㄱ from DDS micro processor, V period "L" pulse
49	———	–	———
50	———	–	———
51	$\overline{Focus\ FG}$	I	Interruption outbreak at focus MOTOR FG ㄱ, "L" when auto focus is off, "H" pulse of the period corresponding to the rotation speed of focus motor when the auto focus is on
52	CLK OUT	O	Waveform shaping output of pin ㊹ clock (1.79 MHz)
53	———	–	———
54	CLK IN	I	External clock input, The 14.3 MHz clock input to pin ㉘ of IC904 is frequency divided into 1/8 and input.
55	V_{DD}	–	CAM 5V
56	———	–	———
57	———	–	———
58	———	–	———
59	———	–	———
60	$\overline{SYS\ RST}$	I	Normally "H". "L" when reset
61	AREA	I	Interruption outbreak at ㄱ from CXD-1204 (IC904). V period pulse
62	V_{PP}	–	CAM 5V
63	———	–	———
64	———	–	———

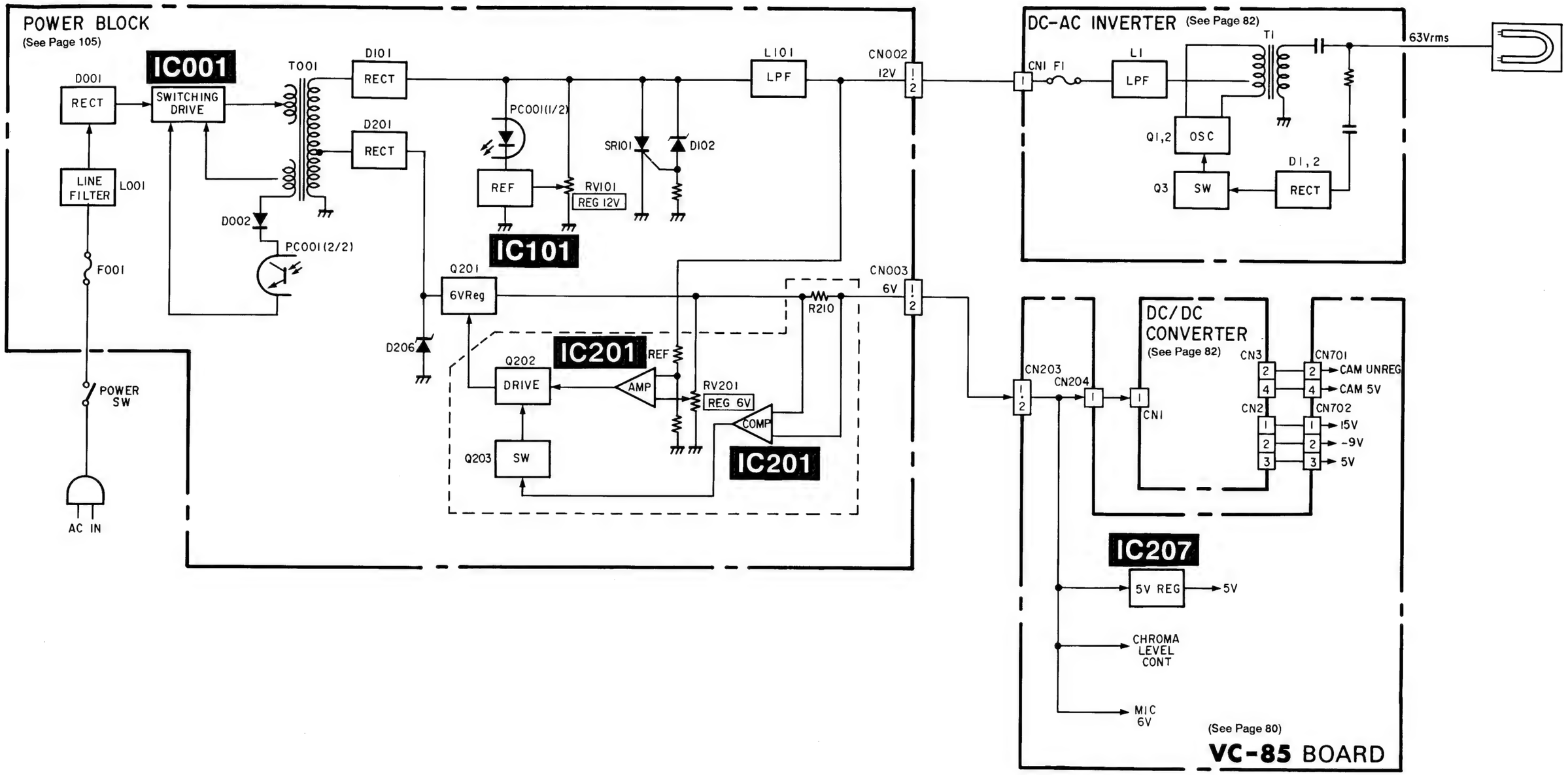
3-8. AUDIO BLOCK DIAGRAM



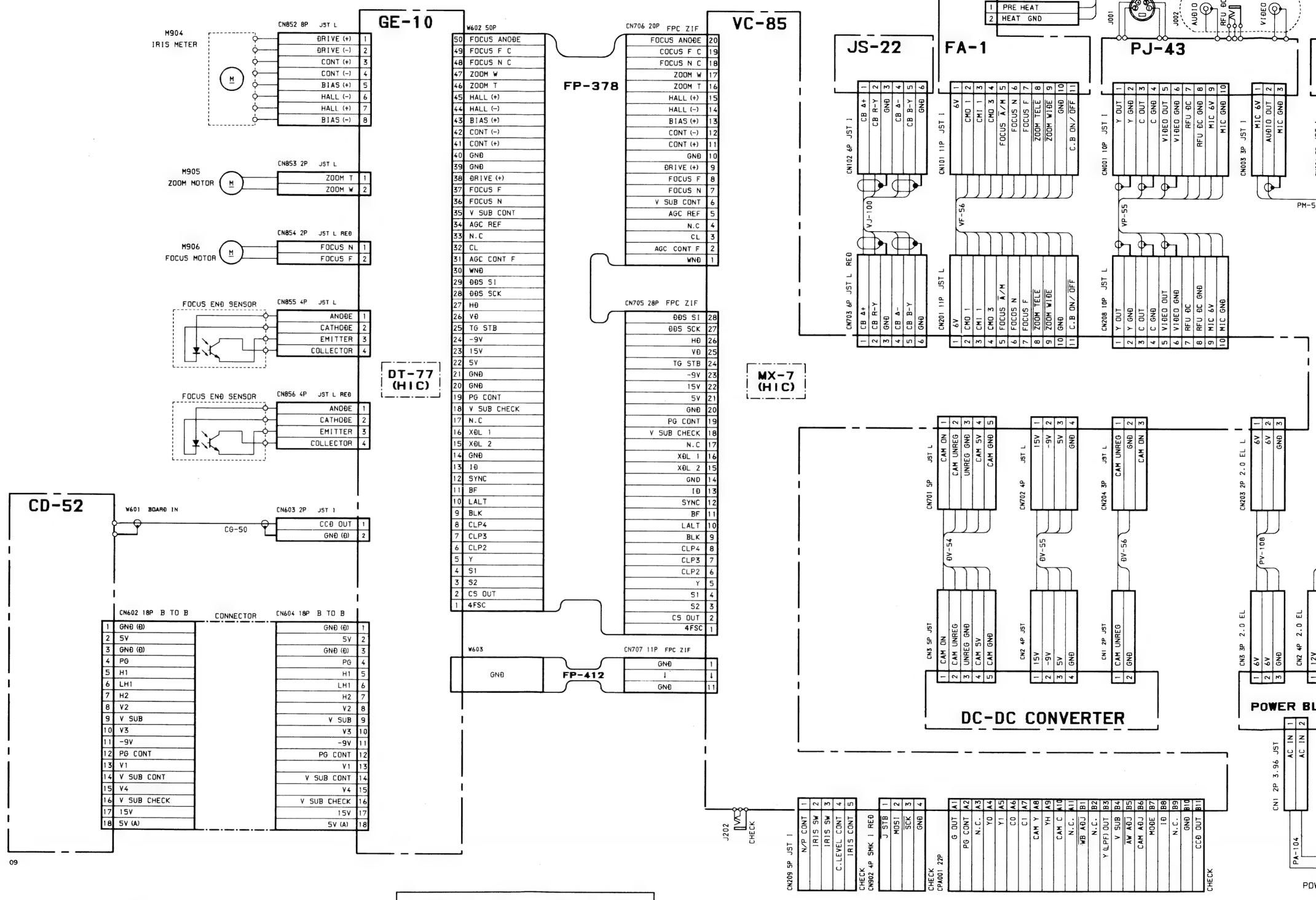
3-9. POWER BLOCK DIAGR



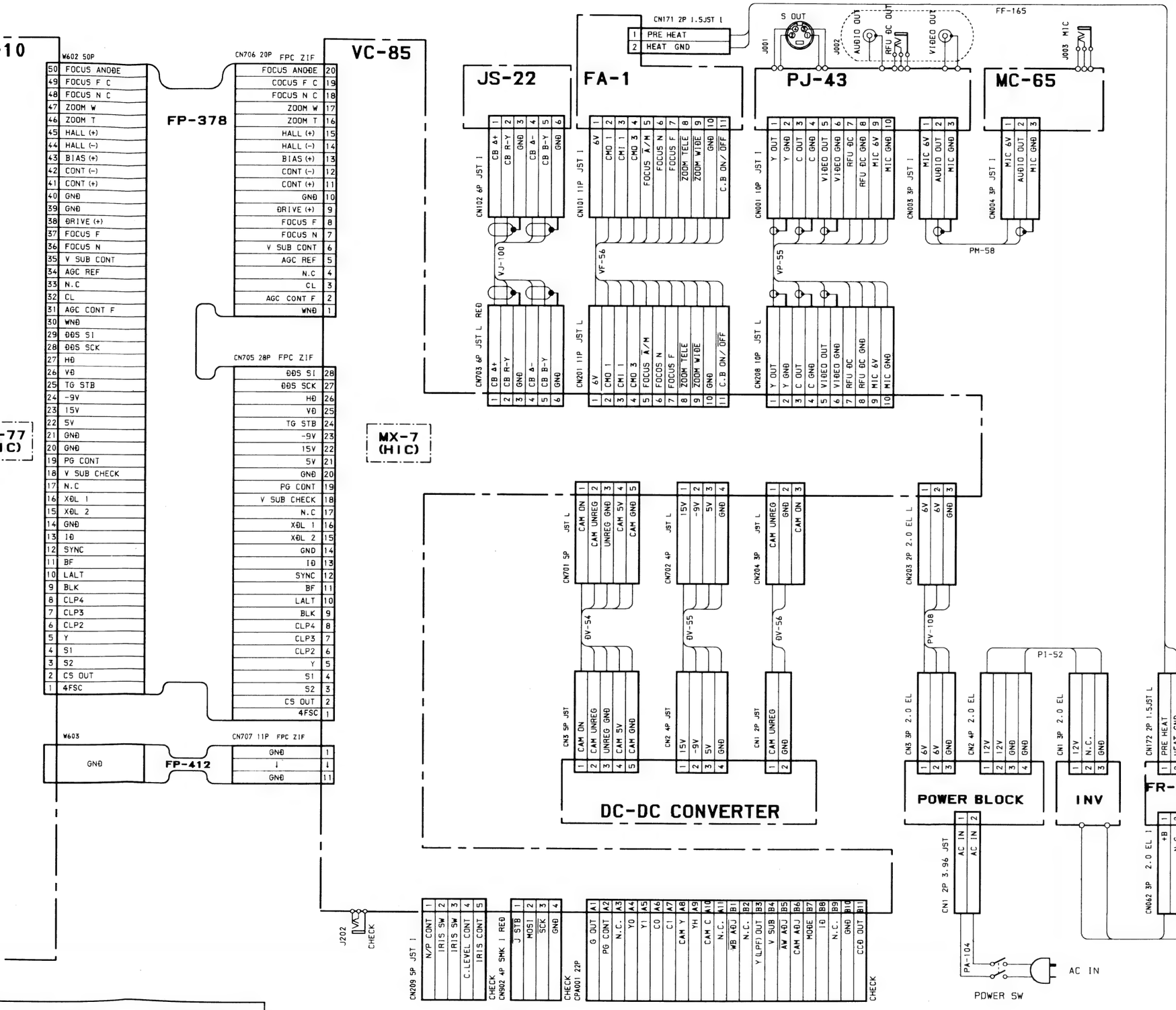
3-9. POWER BLOCK DIAGRAM



4-1. FRAME SCHEMATIC DIAGRAM



7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22



4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this , the necessary note is printed in each block.)

- **For printed wiring boards.**
- ○— : indicated a lead wire mounted on the component side.
- ● : Through hole.
- ■ : Parts mounted on the conductor side.
- ▒ : Pattern from the side which enables seeing.
- ▒ : Pattern of the rear side.
- Circled numbers refer to waveforms.

Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component side)	Parts on the parts face side seen from the parts face are indicated.

- **For schematic diagrams.**
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minuts side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/6W unless otherwise noted.
  Chip resistor are 1/16W unless otherwise noted.
  kΩ : 1000Ω , MΩ : 1000kΩ .
- All capacitors are in μF unless otherwise noted. pF: μμF.
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- ▭ : panel designation.
- ▭ : adjustment for repeair.
- ▬ : B+ Line.
- ▬ ▬ : B– Line.
- ⇒ : IN/OUT direction of (+, –) B LINE.
- Circled numbers refer to waveforms.

Note:
The components identi- fied by mark ⚠ or dotted line with mark ⚠ are critical for safty.
Replace only with part number specified.

When indicating parts by refer- ence number, please include the board name.

- **Measuring conditions voltage value and waveform.**
- The object is color bar chart (positive type).
- Voltages are dc between ground and measurement points. Readings are taken with a digital multimeter (DC 10MΩ).
- Voltage variations may be noted due to normal production tolerances.

1. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

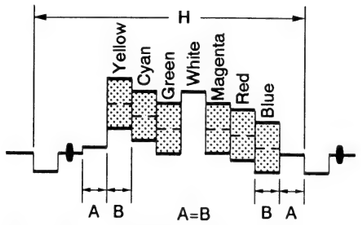


Fig. a (Video output terminal output waveform

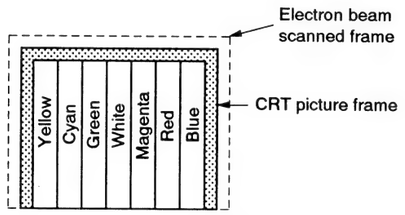
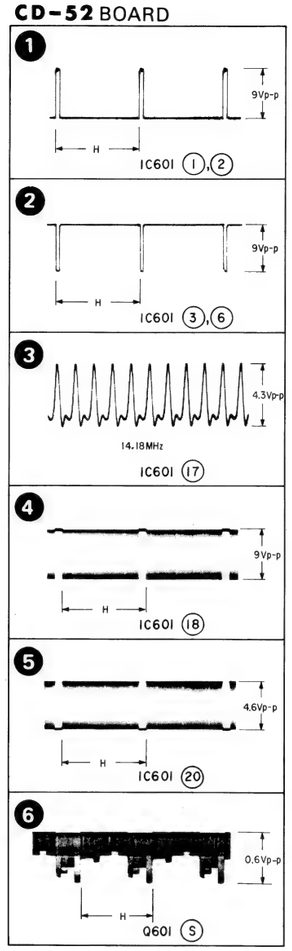


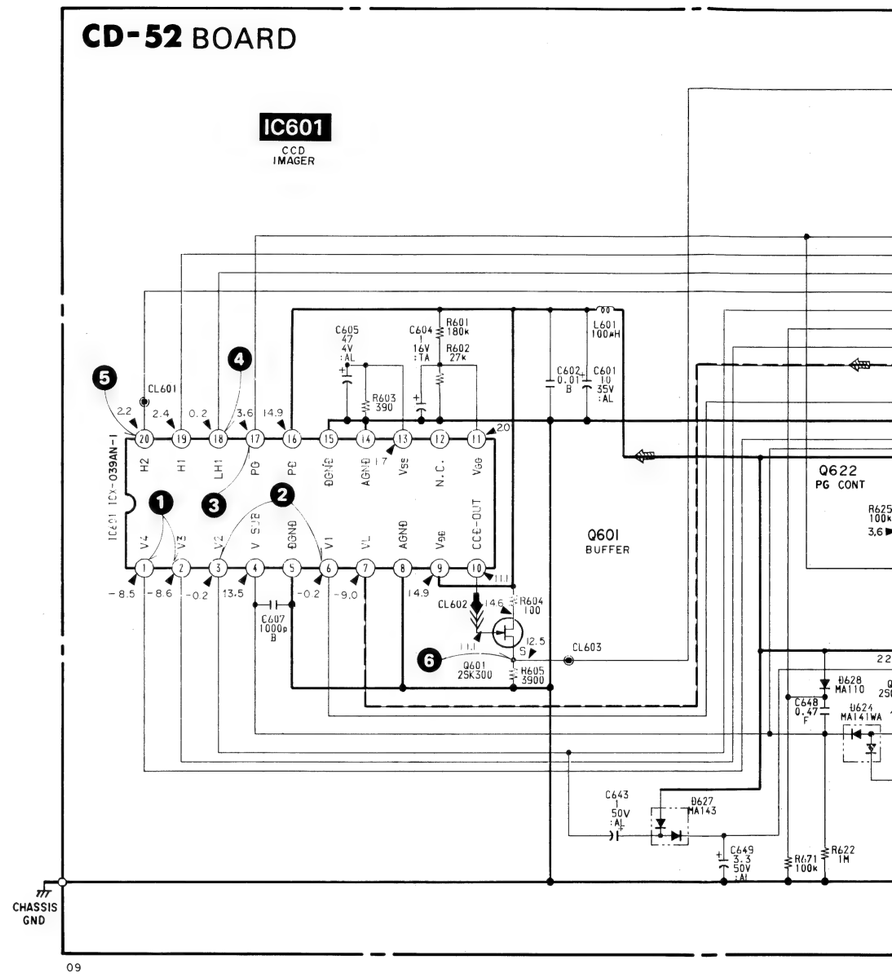
Fig. (Picture on monitor TV)

CD-52 BOARD



CD-52 (CCD IMAGER) SCHEMATIC DIAGRAM

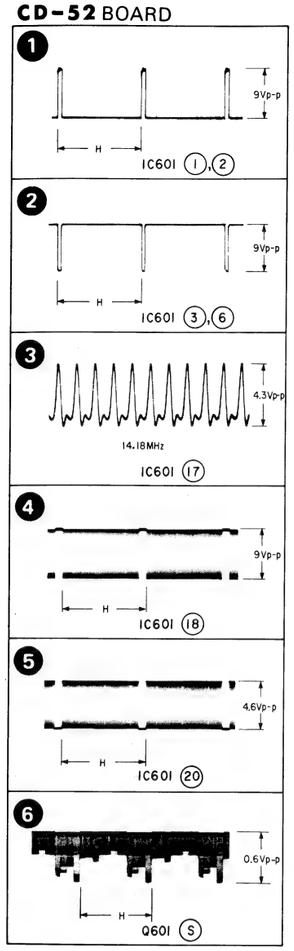
— Ref. No. CD-52 BOARD: 1000 series —



- **SIGNAL PAT**

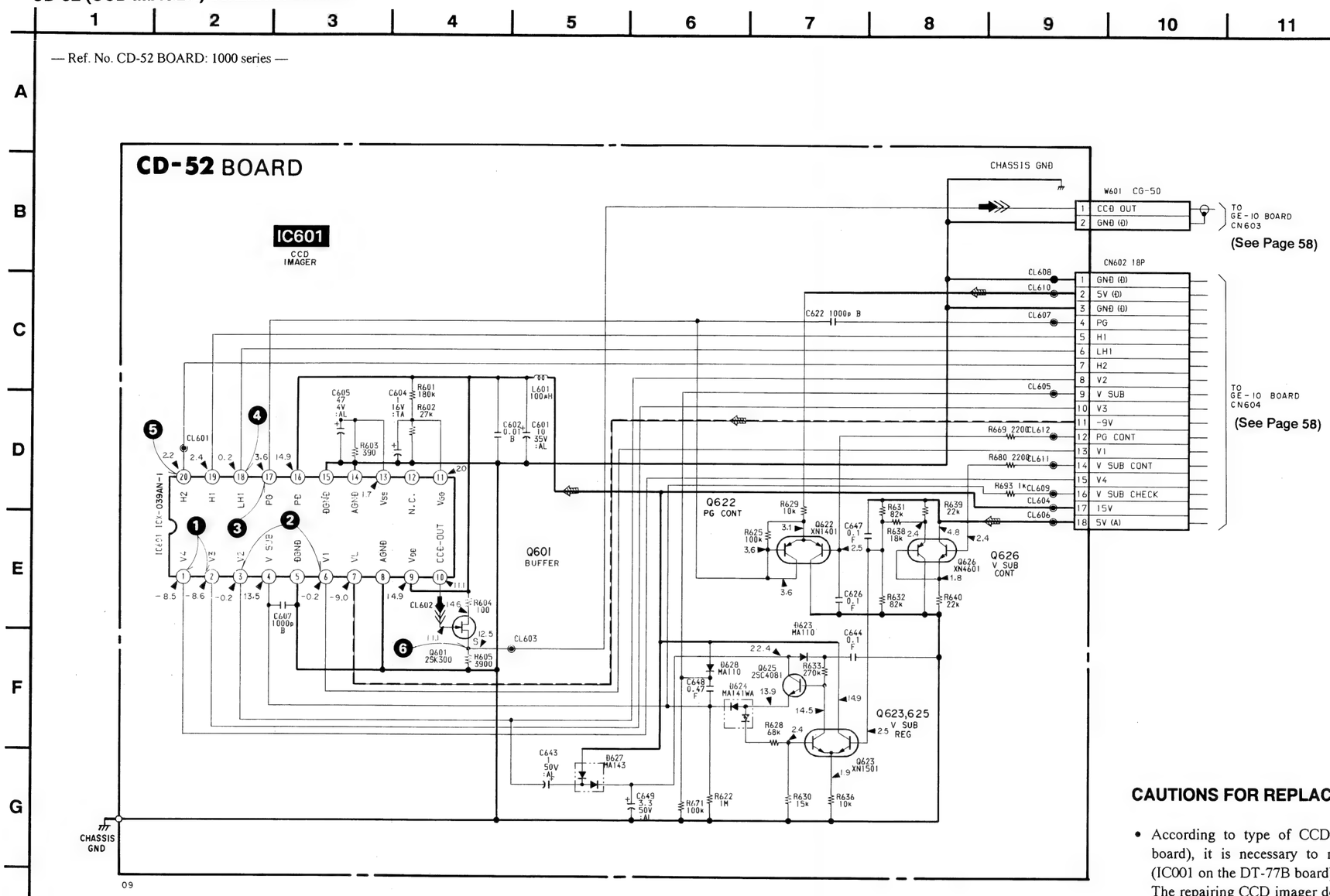
	CHRON
REC	
PB	

CD-52 BOARD



CD-52 (CCD IMAGER) SCHEMATIC DIAGRAM

— Ref. No. CD-52 BOARD: 1000 series —



• **SIGNAL PATH**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA/DATA	
REC			➡	
PB				

CAUTIONS FOR REPLACING THE CCD IMAGER

- According to type of CCD imager (IC101 on the CD-52 board), it is necessary to require the compensating ROM (IC001 on the DT-77B board).
  The repairing CCD imager does not require the compensating ROM.
  So when replacing the CCD imager on which the compensating ROM is installed, remove the compensating ROM before replacement.
- Since the mounted CD-52 and DT-77B boards which are supplied as a repair parts are not installed IC101 and IC001 respectively, replace the respective ICs from the previous board to the new when replacing each board.
- When you replaced the CCD imager, perform the overall camera head adjustment.
- CCD imager has such a structure that it may be spoiled by static electricity, so handle it with a care similar for MOS IC. Further, be sure that the light receiving part has no stick of dust and no entry of bright light.

CCD IMAGER CCD IMAGER

CD-52 (CCD IMAGER) PRINTED WIRING BOARD

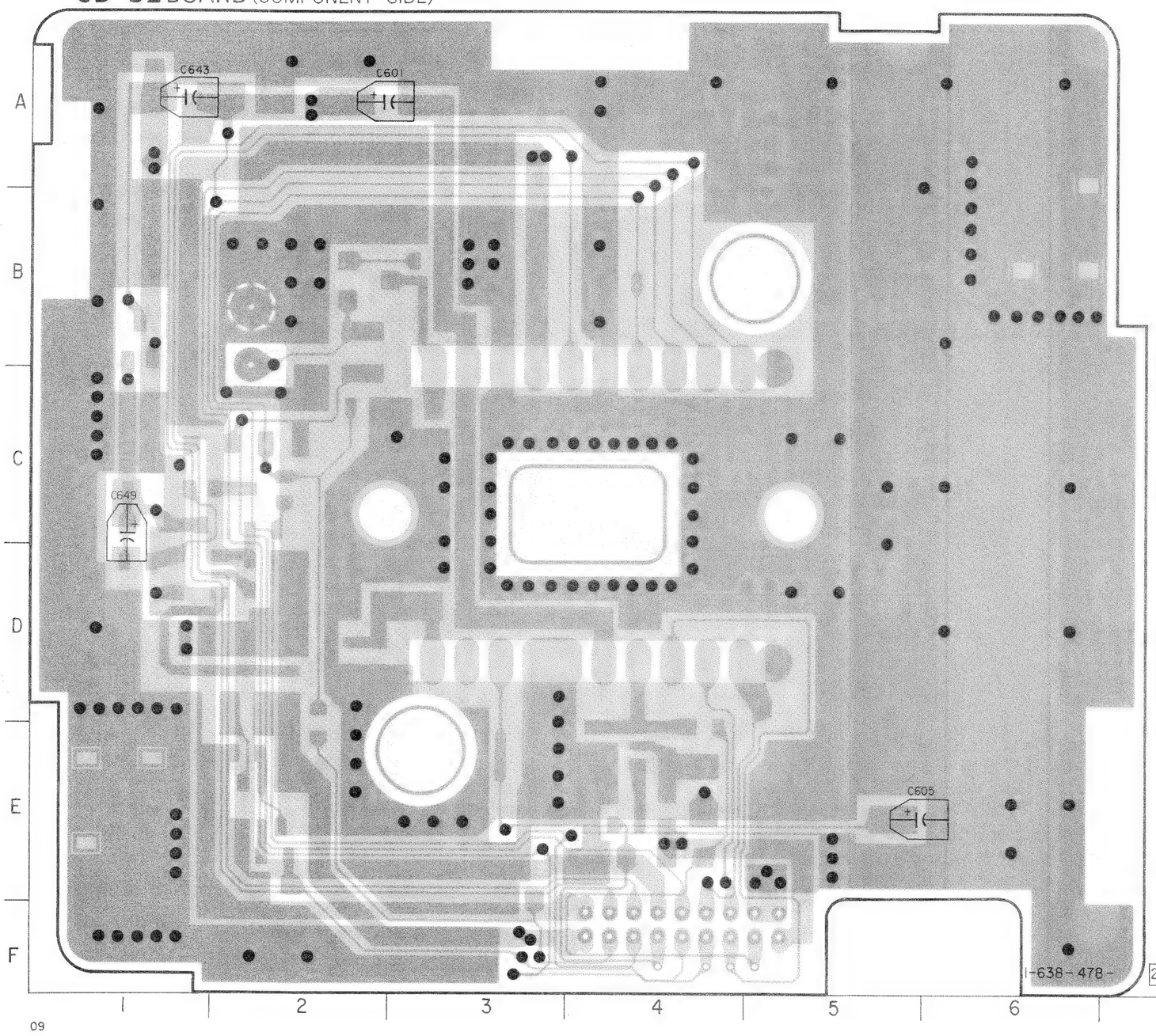
— Ref. No. CD-52 BOARD: 1000 series —

CD-52 BOARD

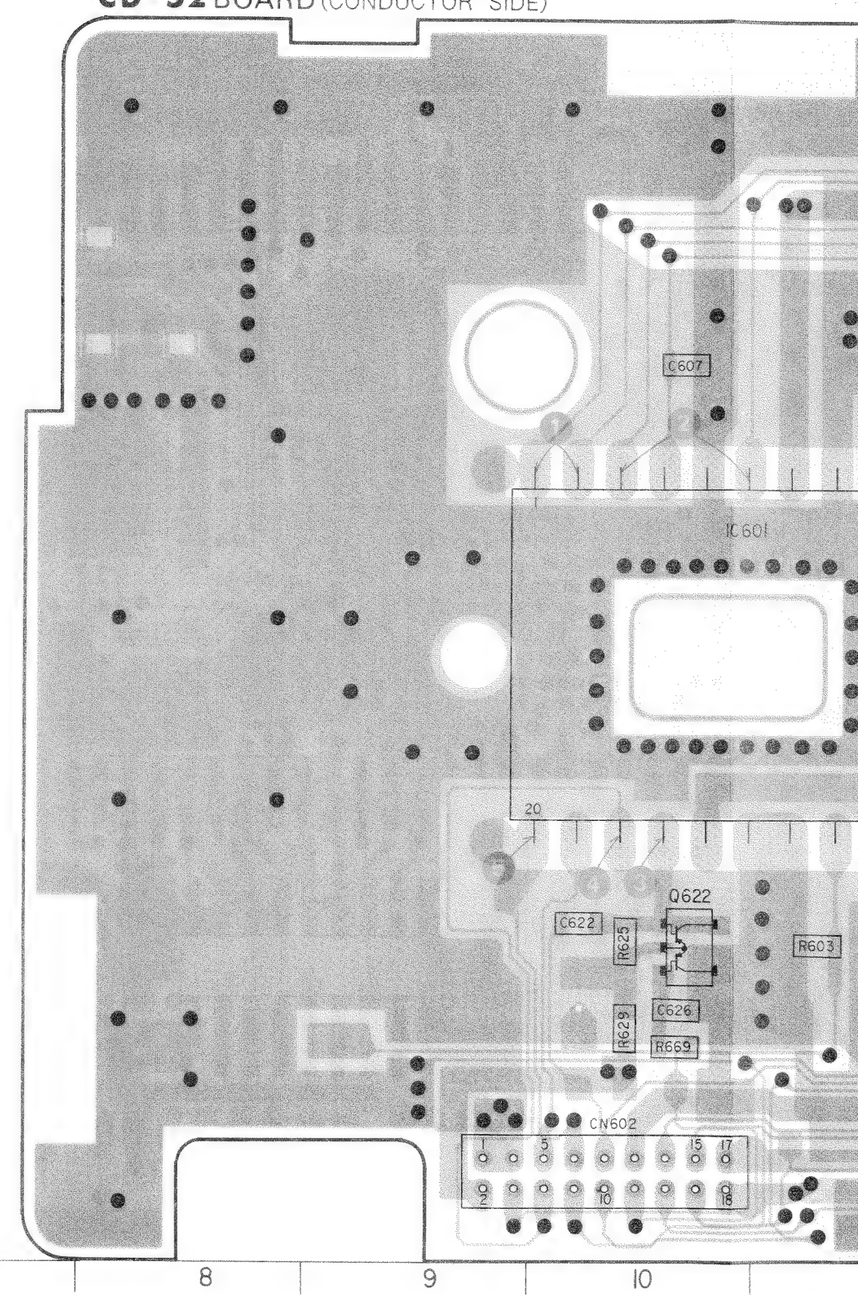
D623 C-13
D624 C-12
D627 B-13
D628 C-13

Q601 B-12
Q622 E-10
Q623 D-13
Q625 C-13
Q626 E-12

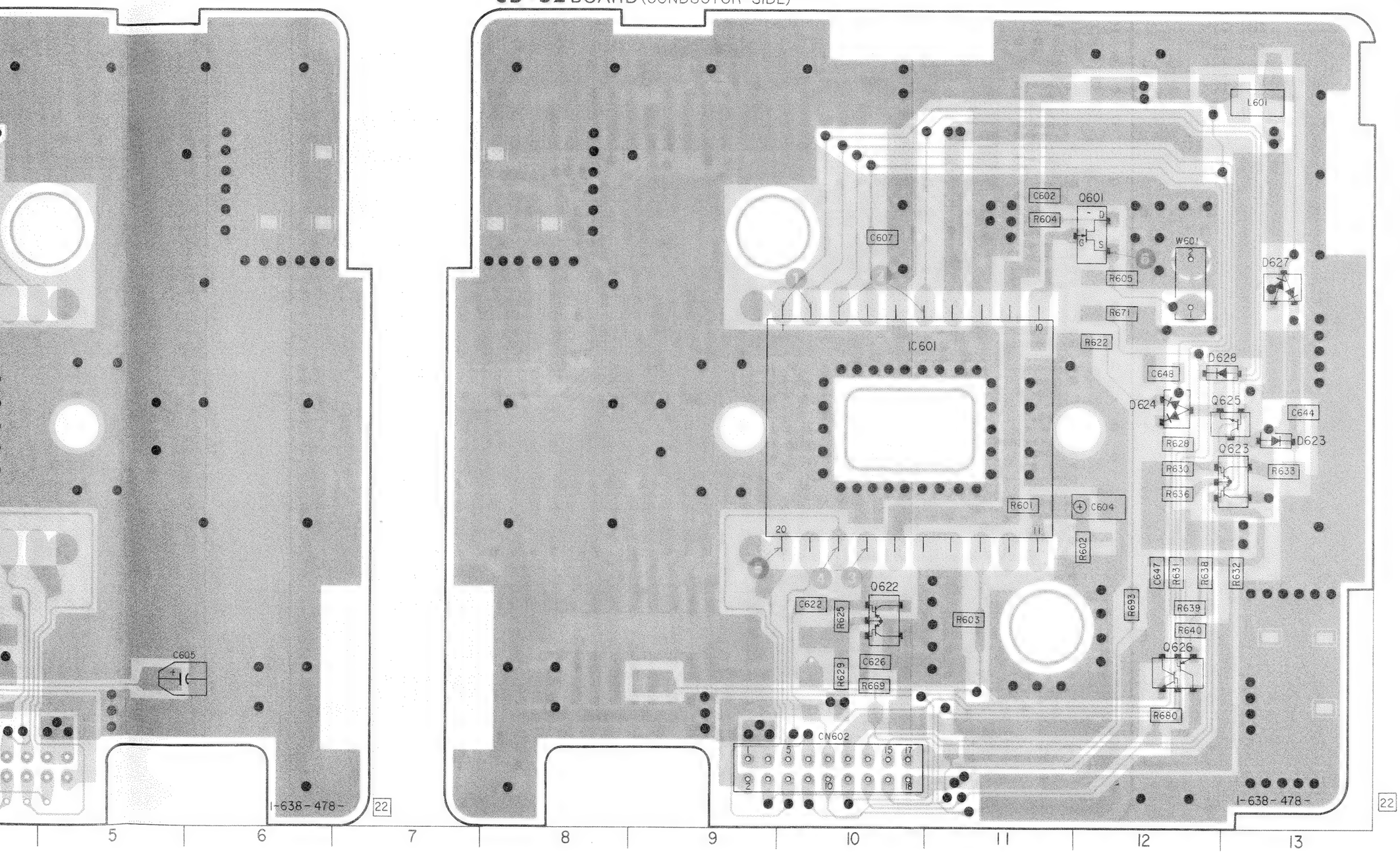
CD-52 BOARD (COMPONENT SIDE)



CD-52 BOARD (CONDUCTOR SIDE)



CD-52 BOARD (CONDUCTOR SIDE)



* A-7062-929-A CD-52 BOARD, COMPLETE
****
(Ref. No 1,000 Series)

< DIODE >

D623	8-719-404-46	DIODE	MA110
D624	8-719-820-05	DIODE	1SS181
D627	8-719-800-76	DIODE	1SS226
D628	8-719-404-46	DIODE	MA110

< TRANSISTOR >

Q601	8-765-420-02	TRANSISTOR	2SK300-3
Q622	8-729-403-42	TRANSISTOR	XN1401
Q623	8-729-421-23	TRANSISTOR	XN1216
Q625	8-729-905-35	TRANSISTOR	2SC4081-R
Q626	8-729-402-84	TRANSISTOR	XN4601

GE-10 (SYNC/TIMING GENERATOR) PRINTED WIRING BOARD

— Ref. No. GE-10 BOARD: 4000 series —

* A-7062-930-A GE-10 BOARD, COMPLETE
****
(Ref. No 4,000 Series)

A-7068-165-A DT-77B BOARD, COMPLETE (HIC)

< DIODE >

D621	8-719-404-46	DIODE	MA110
D622	8-719-404-46	DIODE	MA110
D625	8-719-949-46	DIODE	1T32
D631	8-719-404-46	DIODE	MA110

< IC >

IC621	8-752-326-08	IC	CXD1159Q

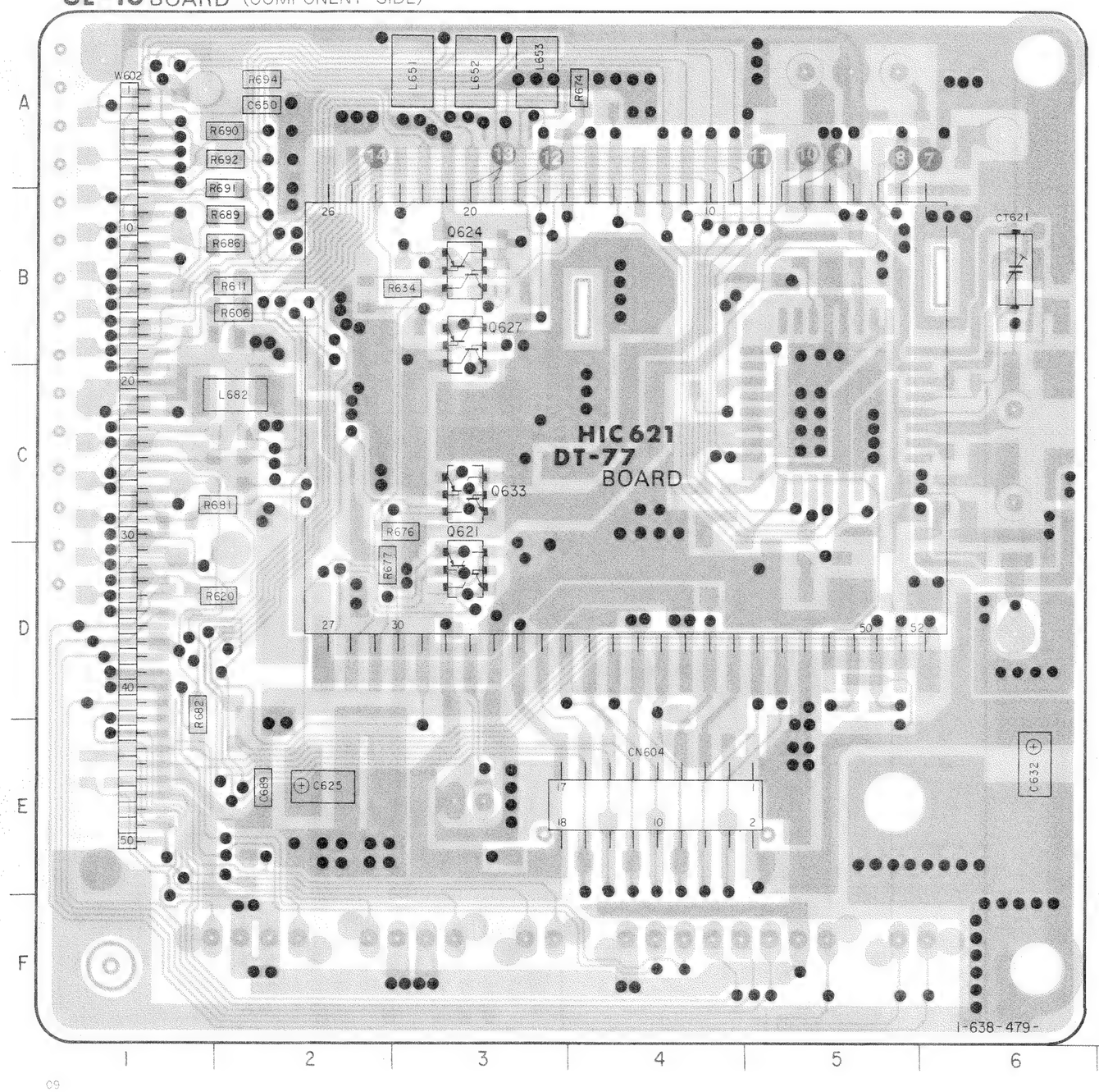
< TRANSISTOR >

Q621	8-729-402-84	TRANSISTOR	XN4601
Q624	8-729-402-84	TRANSISTOR	XN4601
Q627	8-729-402-84	TRANSISTOR	XN4601
Q628	8-729-905-35	TRANSISTOR	2SC4081-R
Q630	8-729-905-35	TRANSISTOR	2SC4081-R
Q633	8-729-402-84	TRANSISTOR	XN4601

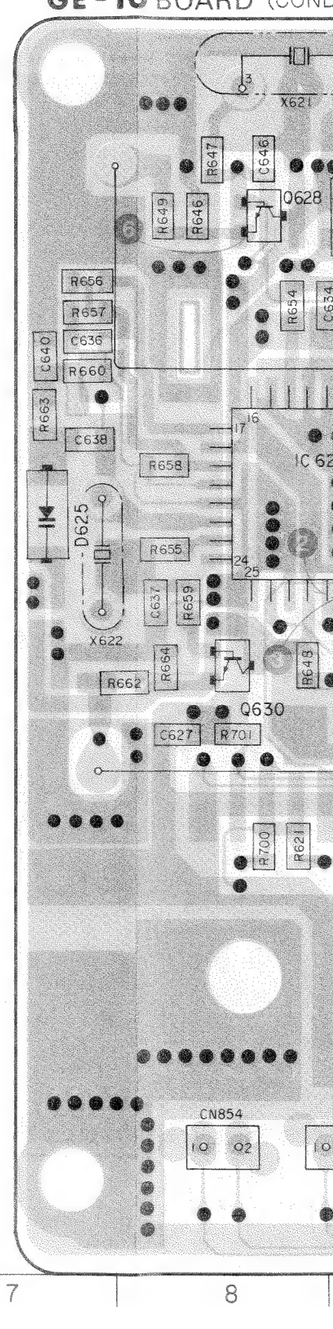
GE-10 BOARD

D621	D-12
D622	D-12
D625	C-7
IC621	C-8
Q621	D-3
Q624	B-3
Q627	B-3
Q628	A-8
Q630	D-8
Q633	C-3

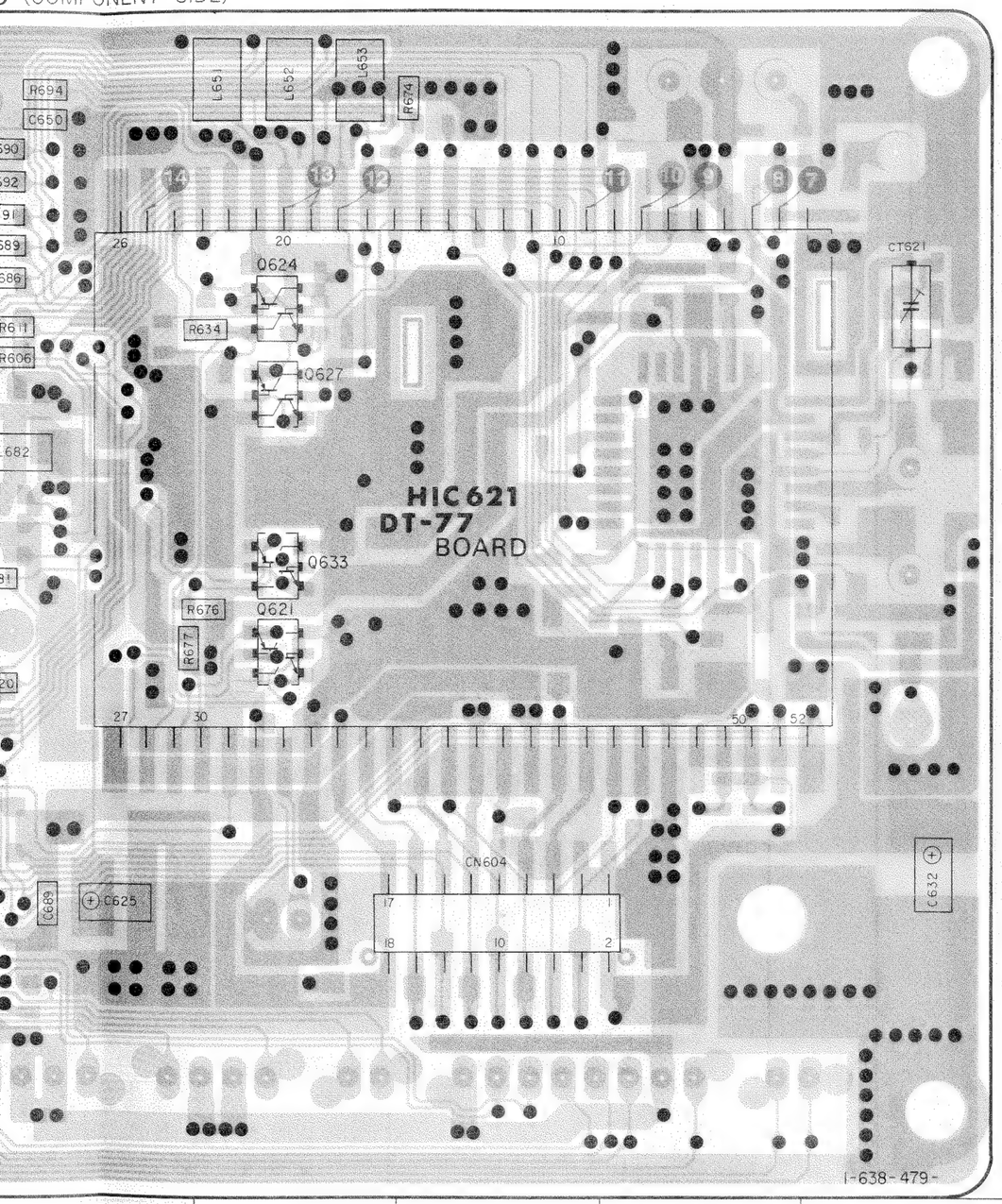
GE-10 BOARD (COMPONENT SIDE)



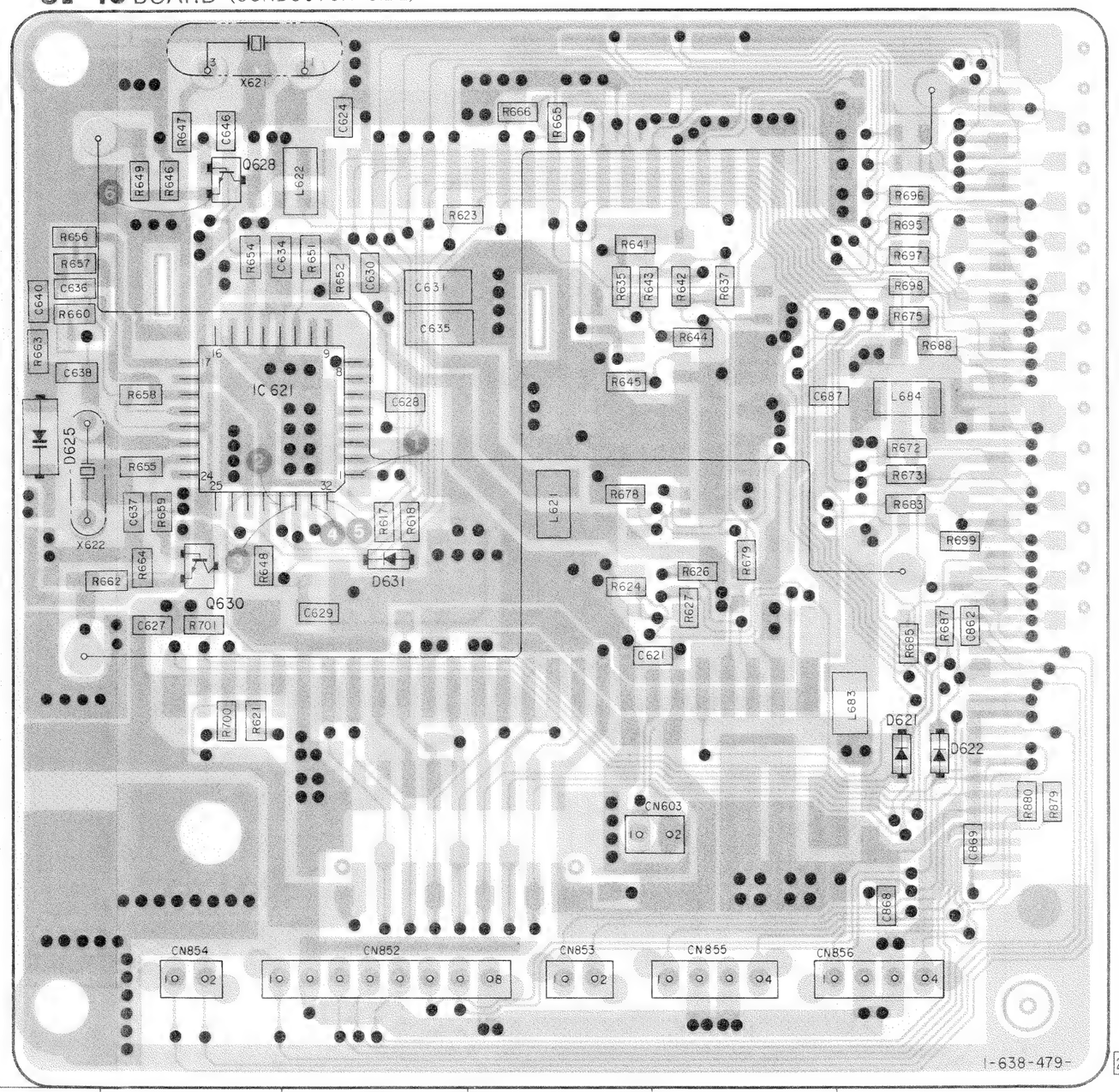
GE-10 BOARD (COND



D (COMPONENT SIDE)

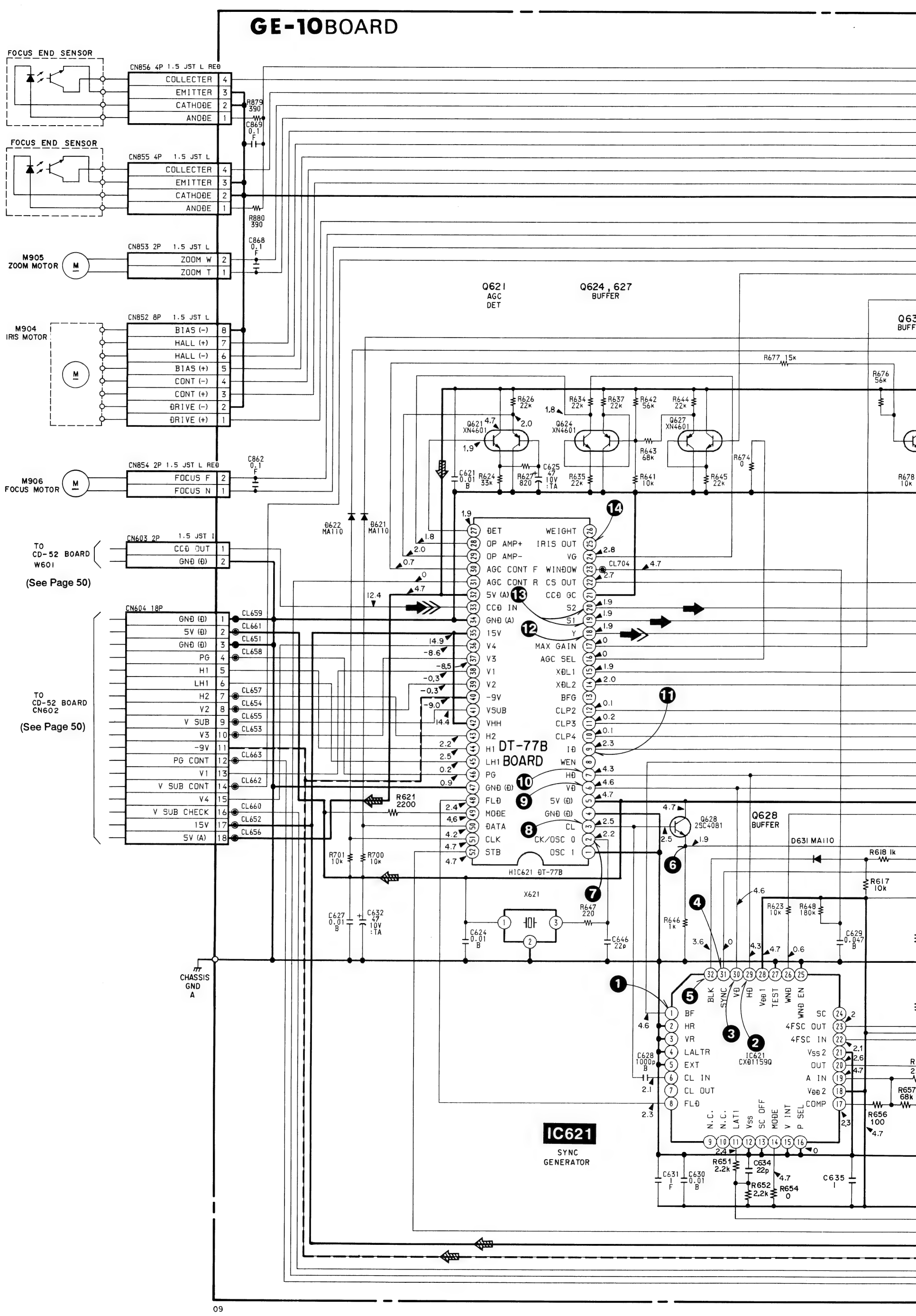


GE-10 BOARD (CONDUCTOR SIDE)



2 3 4 5 6 7 8 9 10 11 12

— Ref. No. GE-10 BOARD: 4000 series —



W602 50P

50	FOCUS A
49	FOCUS F
48	FOCUS N
47	ZOOM W
46	ZOOM T
45	HALL (+)
44	HALL (−)
43	BIAS (+)
42	CONT (−)
41	CONT (+)
40	GND
39	GND
38	DRIVE (+)
37	FOCUS F
36	FOCUS N
35	V SUB C
34	AGC REF
33	N.C
32	CL
31	AGC CON
30	WND
29	DDS SI
28	DDS SCK
27	HD
26	VD
25	TG STB
24	-9V
23	15V
22	5V
21	GND
20	GND
19	PG CONT
18	V SUB C
17	N.C
16	XDL1
15	XDL2
14	GND
13	ID
12	SYNC
11	BF
10	LALT
9	BLK
8	CLP4
7	CLP3
6	CLP2
5	Y
4	S1
3	S2
2	CS OUT
1	4FSC

624, 627
BUFFER

Q633
BUFFER

R687 2200 CL665
R620 2200 CL666
CL668
R685 1K CL669
R699 1K CL670
R681 1K CL671
R683 1K CL672
R673 2200 CL673
R672 2200 CL674
R682 1K CL695
CL677
CL676
CL675
CL696

R677 15K
R676 56K
R679 10K
R637 22K
R642 56K
R644 22K
Q627 XN4601
R643 68K
R674 0
R641 10K
R645 22K
Q633 XN4601
R678 10K
C687 2200P B
C689 2200P B
L683 1μH
L682 1μH
L684 1μH
R611 0
R606 0

R688 2200 CL688
R675 1K CL681
R665 220 CL693
R666 220 CL694
R686 0 CL701
R689 1K CL692
R698 2200 CL686
R695 2200 CL683
R696 1K CL684
R697 1K CL685
R691 1K CL691
R692 1K CL690
R690 1K CL689
L653 1μH CL680
L652 1μH CL679
L651 1μH CL678
R694 1K CL682
CL702
C650 22P

CL704 4.7 2.7
2.8
1.9 1.9 1.9
0 0
1.9 2.0
0.1 0.2 0.1 2.3
4.3 4.6 4.7
2.5 2.2

Q628 2SC4081
Q628 BUFFER
D631 MA110
R618 1K
L622 10μH
CL697
R649 330

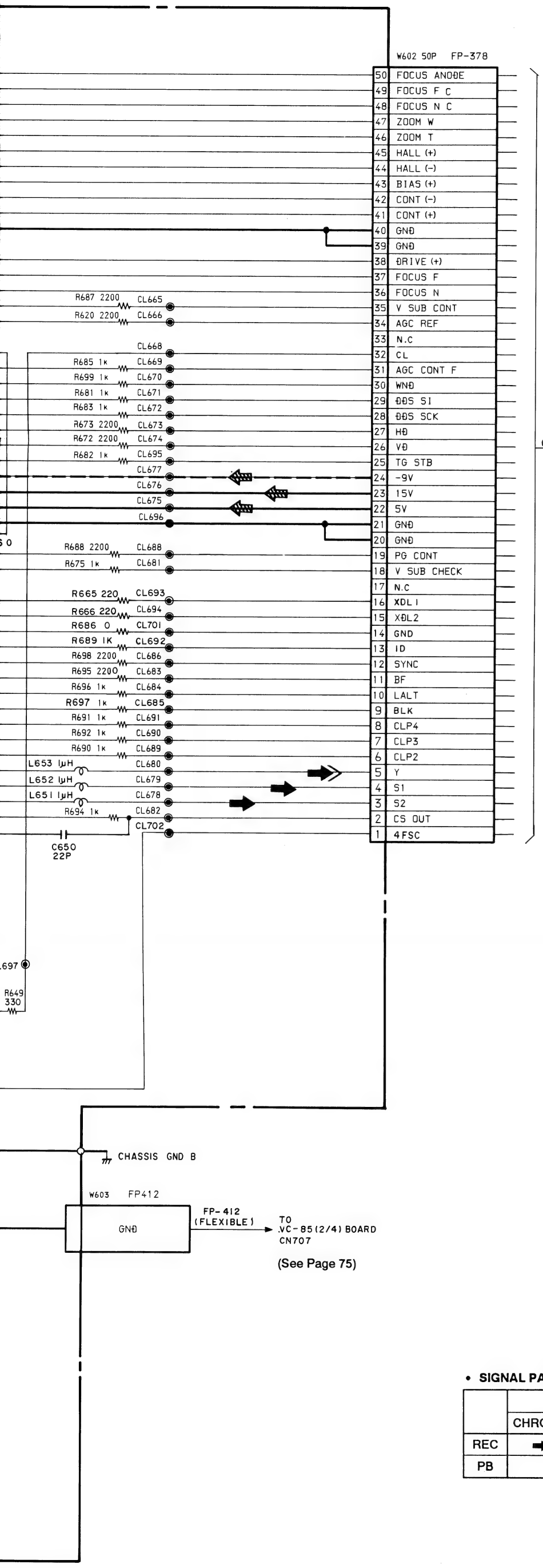
R617 10K
Q630 2SC4081
R623 10K
R648 180K
R646 1K
C646 22P
C629 0.047 B
R659 100
R662 2200
R664 2200
C637 22P
R655 0
X622 17MHz
D625 1T32
R658 2.7M
R657 68K
C636 0.01
R660 10K
R663 100K
C638 470P
CL664
C640 1000P
CT621 30P
R656 100
C628 1000P B
C631 1 F
C630 0.01 B
R651 2.2K
C634 22P
R652 2.2K
R654 0
C635 1
L621 10μH
PLL

IC621 CXD1159Q
1 BF
2 HR
3 VR
4 LALTR
5 EXT
6 CL IN
7 CL OUT
8 FLD
9 N.C.
10 N.C.
11 LATI
12 Vss
13 SC OFF
14 MODE
15 V INT
16 P SEL
17 COMP
18 VDD 2
19 A IN
20 OUT
21 Vss 2
22 4FSC IN
23 4FSC OUT
24 SC
25 WND EN
26 WND
27 TEST
28 VDD 1
29 HD
30 VD
31 SYNC
32 BLK

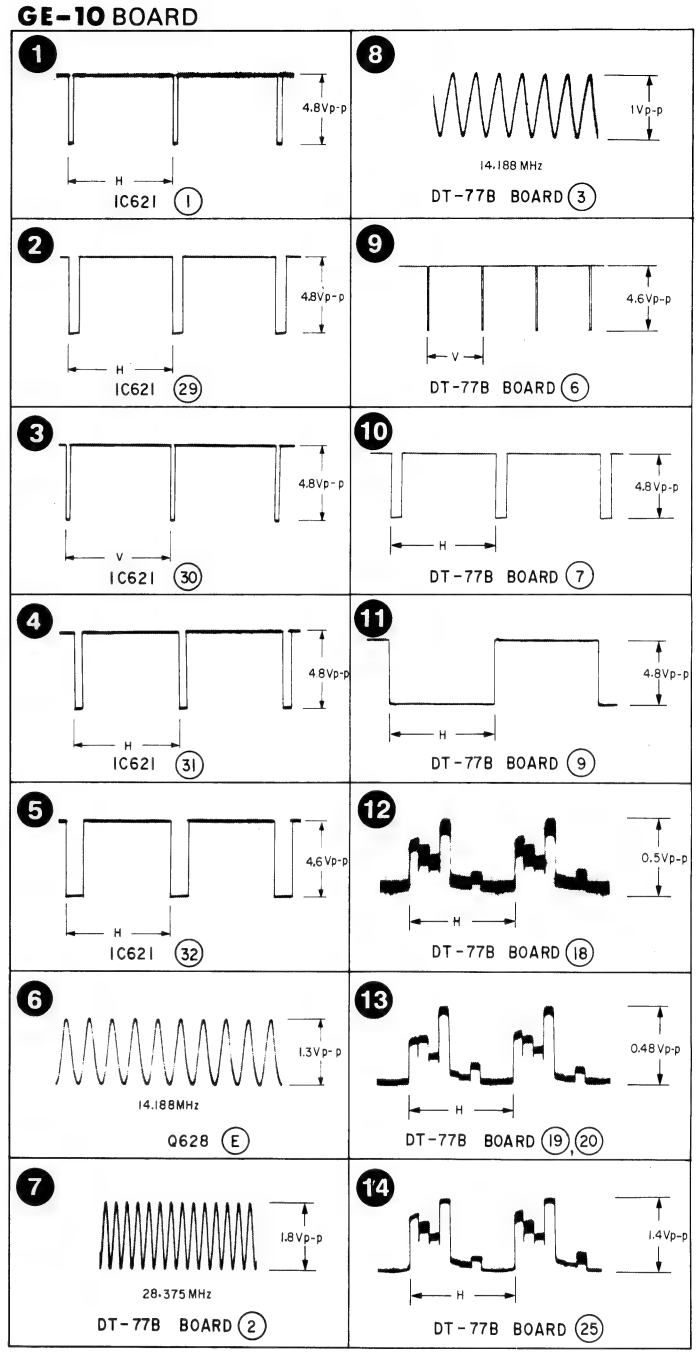
CHASSIS GND B

W603 FP412
GND
FP-412 (FLEXIBLE)
TO VC-85(2/4) BOARD CN707

(See Page 75)



GE-10 BOARD



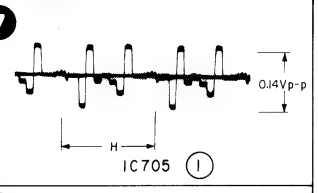
- **SIGNAL PATH**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA/DATA	
REC	➡	➡	➡	
PB				

VC-85 (CAMERA PROCESS, SYSTEM CONTROL) SCHEMATIC DIAGRAM

VC-85 BOARD (1/4)

7



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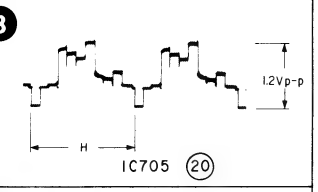

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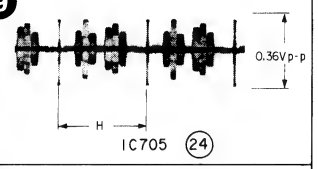

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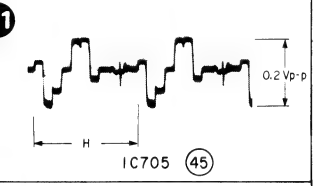
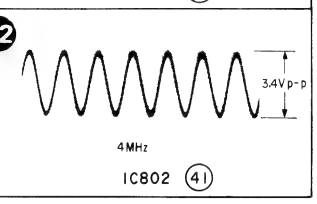
11



12



— Ref. No. VC-85 BOARD: 7000 series —

VC-85 (1/4) BOARD

IC702
PROCESS

TO VC-85(4/4) BOARD
(See Page 95)

POS1 RG CE
POS1 BG CF

Y1 GAIN CA
C1 GAIN CB
C2 GAIN CC
YH GAIN CD

R OUT CG
ĐC OUT CH
G OUT CI
B OUT CJ
YH CK
YL-YH CL
CS Y CM
AGC CONT EI
CAM 5V CO
CAM GNĐ G
CLP 2 CP
BF CQ
LALT CR
BLK CS
SYNC CT
PG CONT CU
V SUB CV
YO CW
Y1 CX
CO CY
C1 CZ
Y (LPF) OUT A
CS OUT B
TG STB C
N/P Đ
4FSC E
IĐ F

TO VC-85(2/4) BOARD
(See Page 78)

TO DC-DC CONVERTER CN3
(See Page 82)

CN701 5P 1.5 JST L
CAM ON 1
CAM UNREG 2
UNREG GNĐ 3
CAM 5V 4
CAM GNĐ 5

CL851 CL852 CL853 CL854 CL855 CL856 CL857 CL858

C710 100 6.3V :AL
L702 47μH

CHASSIS GND B

IC702
CXA1339R

MAT GAIN 1
S1 IN
ĐC IN
S2 IN
MAT GAIN 2
S3 IN
GNĐ 2
CLPC S3
CLPC S2
CLPC 1
Vcc
CODING

GATE 1 GATE 2 GATE 3 CLP 2 Y-PEĐ YH OUT YL MIX YL-YH OUT Yr CONT Cr CONT B-Y OUT B-Y HUE

R GAIN B GAIN R CONT B CONT CLP CB CLP CG CLP CR C LEVEL ĐET CB ĐET CR ĐET CR R COMP

B COMP
WNĐ + VĐ
G OUT
C-PEĐ
OFFSET CONT
GNĐ 1
CLP R-G
CLP B-G
R-Y GAIN
B-Y GAIN
R-Y OUT
R-Y HUE

IC802
EVR/AUTO WHITE/BALANCE CPU

IC801
RESET
IC801 S8054ALB
X801 4MHz

IC802
MC68HC05N4 (QFP)

N.C
PC3 (Đ/ASW)
PC4 (SCLK)
PC5 (SI)
PC6 (SO)
PC7 (ĐCS)
PA0 (L IN)
PA1 (L OUT)
PA2 (AĐJ)
PA3 (AF ON)
PA4 (ĐĐS SW)
PA5 (ĐL)

PĐ1 (ĐC)
PĐ2 (R)
PĐ3 (B)
N.C.
PĐ4
PĐ5
PĐ6
PĐ7 (AW IN)
PB0 (CAM VĐĐ)
PB1
PB2
PB3

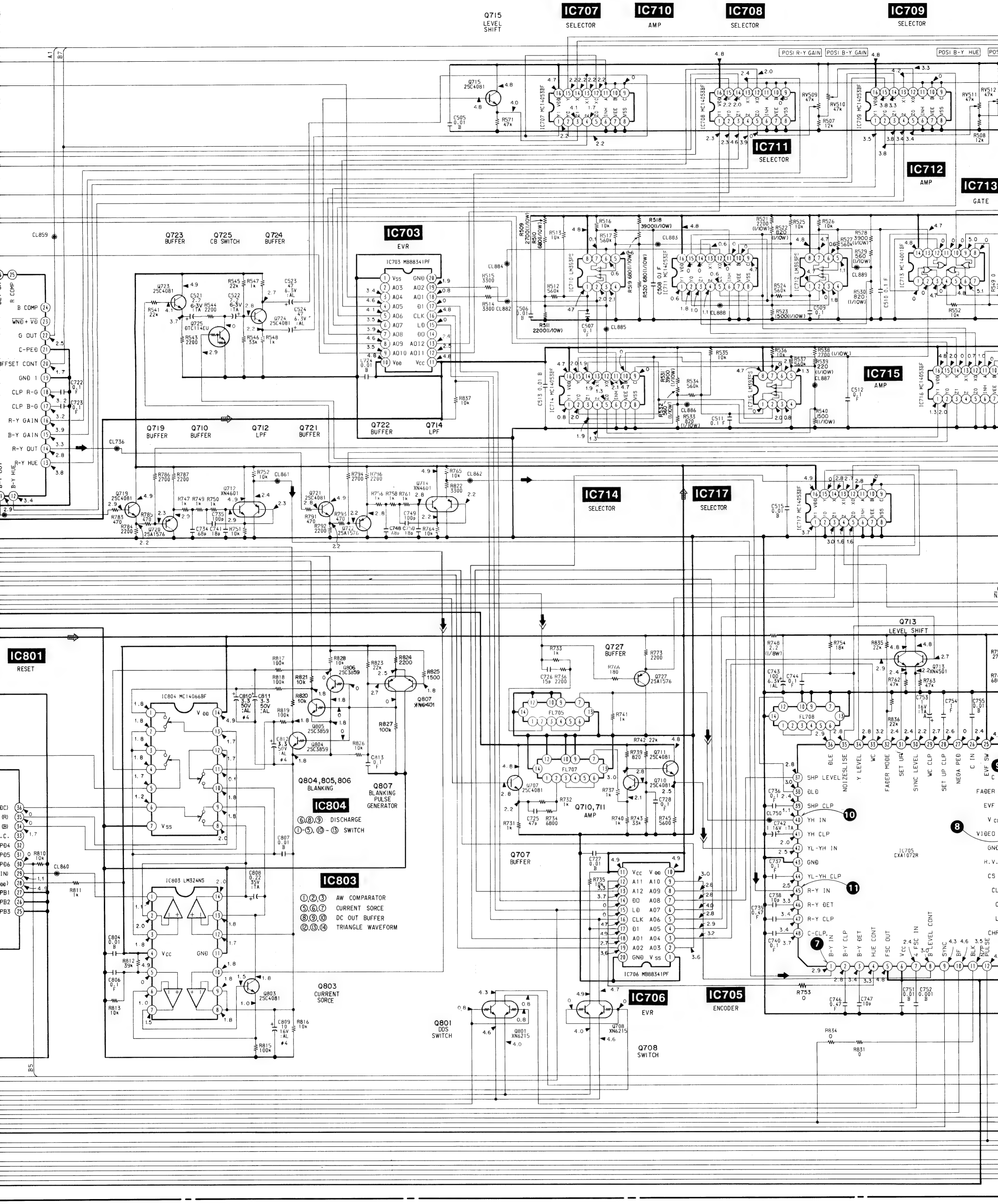
Q802
INVERTER
Đ801 MA141WA
Q802 XN1213

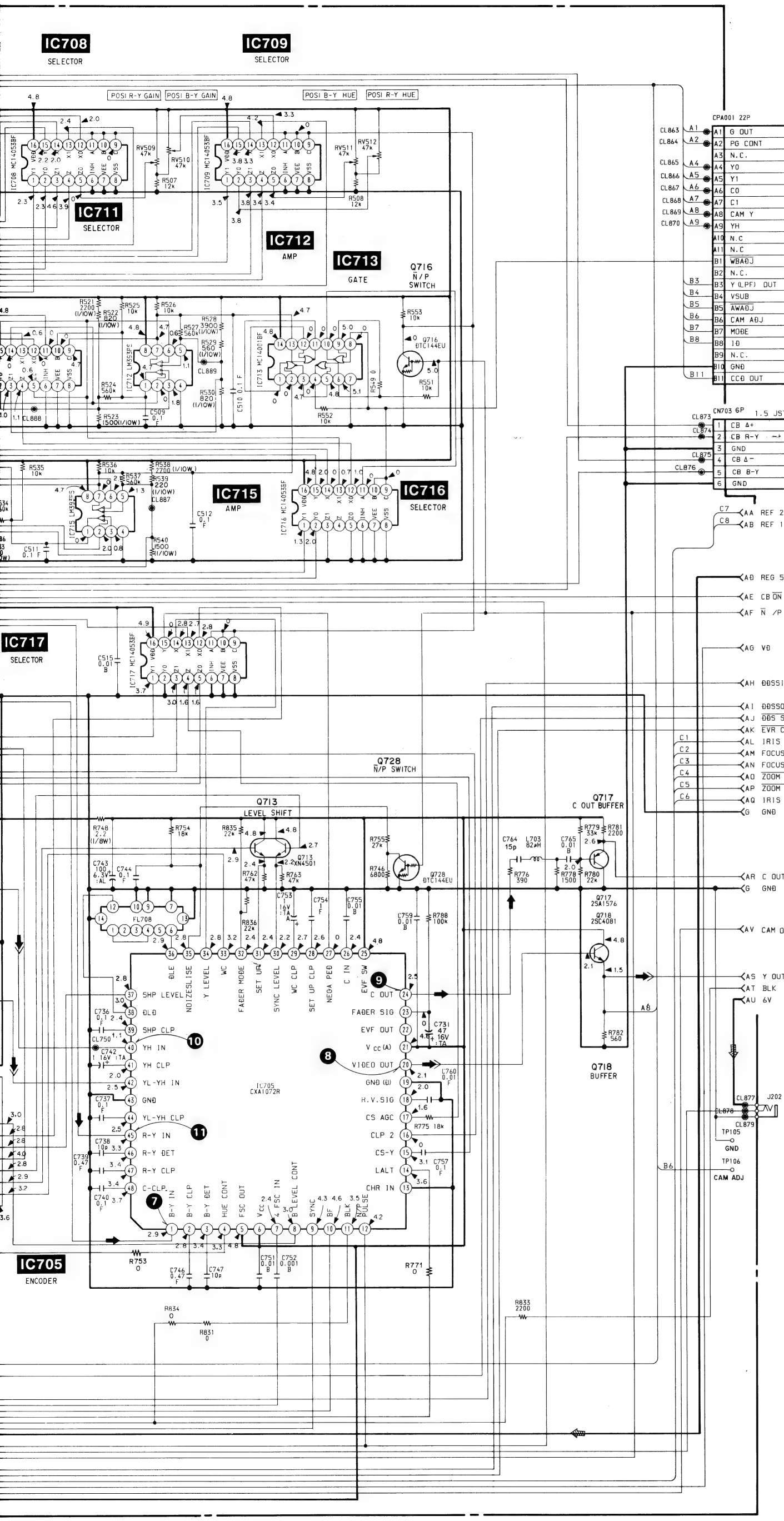
R801 10k
R802 4700
R803 10k
R804 10k
R805 10k
R806 10k
R808 47k
Đ802 MA110
R809 1M
R810 10k

CAM UNREG BA
UNREG GNĐ GA
5V (Đ) BB
VCC ZZ
N/P AF
EVR CS AK
IRIS MENU AL
FOCUS N AM
FOCUS F AN
ZOOM T AO
ZOOM W AP
IRIS VR AQ
ĐĐS SI BC
ĐĐS SCK BĐ
VĐ AG
HĐ BE
REF 1V AB
REF 2V AA

TO VC-85(2/4) BOARD
(See Page 78)

CAMERA CAMERA


IC707 SELECTOR
IC710 AMP
IC708 SELECTOR
IC709 SELECTOR
Q715 LEVEL SHIFT
IC711 SELECTOR
IC712 AMP
IC713 GATE
IC703 EVR
IC703 MB88341PF
Q723 BUFFER
Q725 CB SWITCH
Q724 BUFFER
Q719 BUFFER
Q710 BUFFER
Q712 LPF
Q721 BUFFER
Q722 BUFFER
Q714 LPF
IC801 RESET
IC804 MC14066BF
Q804,805,806 BLANKING
Q807 BLANKING PULSE GENERATOR
IC804
⑥,⑧,⑨ DISCHARGE
①-⑤, ⑩-⑬ SWITCH
IC803 LM324NS
IC803
①,②,③ AW COMPARATOR
⑤,⑥,⑦ CURRENT SORCE
⑧,⑨,⑩ DC OUT BUFFER
⑫,⑬,⑭ TRIANGLE WAVEFORM
Q803 CURRENT SORCE
Q801 DDS SWITCH
IC714 SELECTOR
IC717 SELECTOR
Q727 BUFFER
Q707 BUFFER
Q710,711 AMP
IC706 EVR
Q708 SWITCH
IC705 ENCODER
Q713 LEVEL SHIFT
IC715 AMP
POSI R-Y GAIN
POSI B-Y GAIN
POSI B-Y HUE
R-Y GAIN
B-Y GAIN
R-Y OUT
R-Y HUE
B COMP
G OUT
C-PED
OFFSET CONT
GND
CLP R-G
CLP B-G
SHP LEVEL
SHP CLP
YH IN
YH CLP
YL-YH IN
YL-YH CLP
R-Y IN
R-Y DET
R-Y CLP
C-CLP
B-Y IN
B-Y CLP
B-Y DET
HUE CONT
FSC OUT
VCC
4 FSC IN
LEVEL CONT
SYNC
BF
BLK
VIDEO
GND



- **SIGNAL PATH**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA/DATA	
REC	➡	➡		
PB				

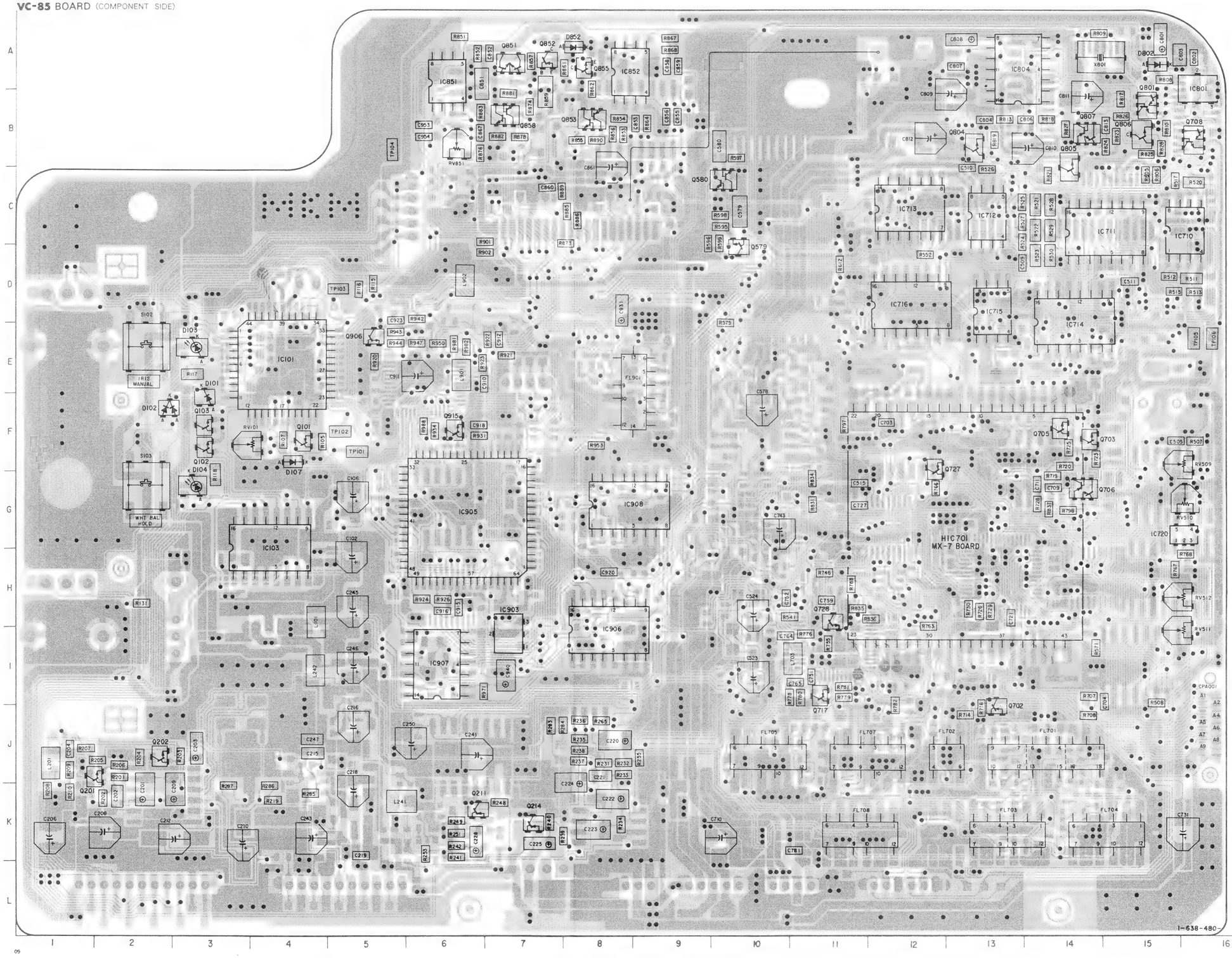
VC-85 (CAMERA PROCESS, SYSTEM CONTROL), FR-62 (FLUORESCENT DISPLAY) PRINTED WIRING BOARDS

— Ref. No. FR-62 BOARD: 3000 series, VC-85 BOARD: 7000 series —

VC-85 BOARD

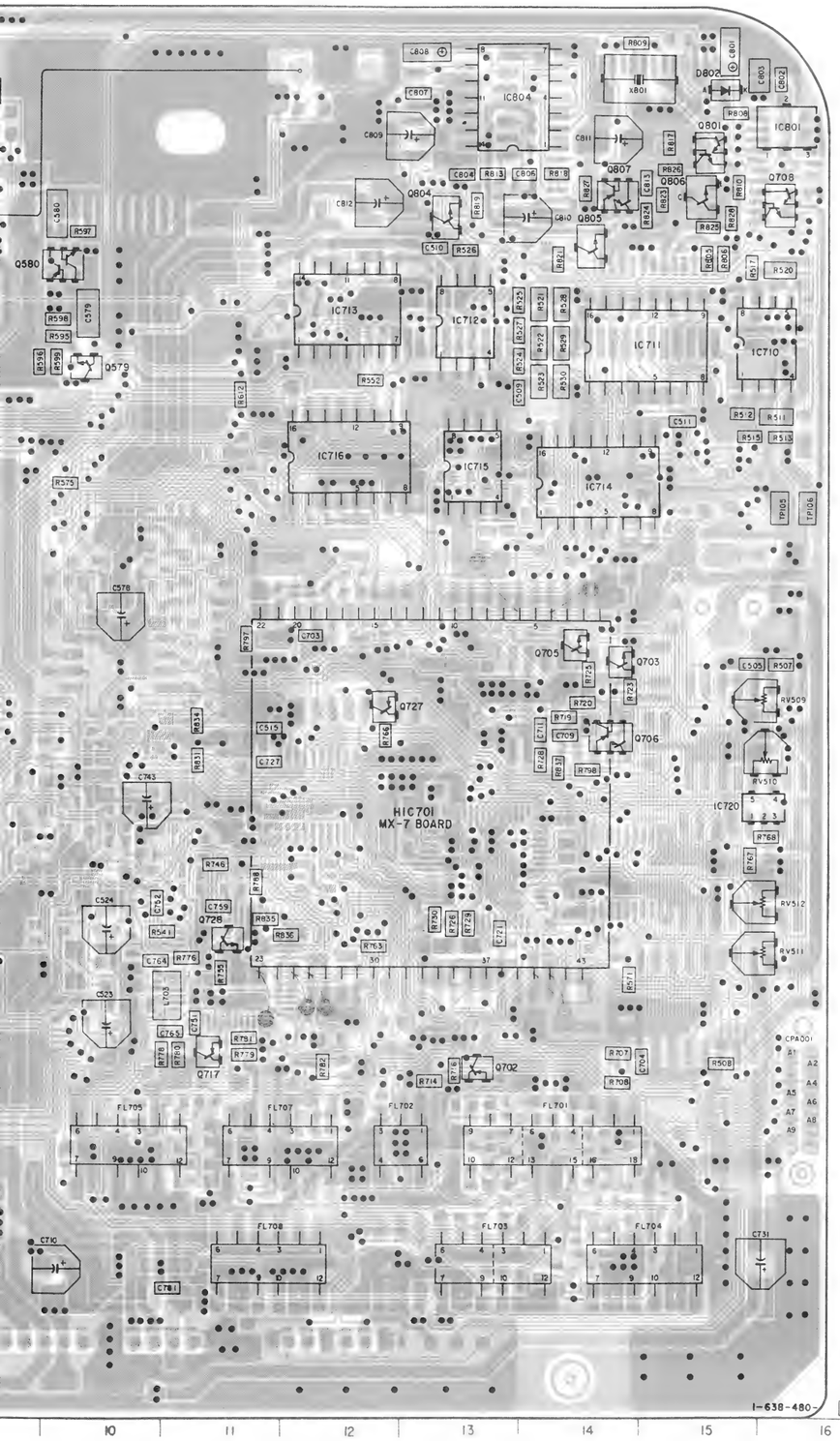
D101	E-3	Q703	F-14
D102	F-2	Q704	K-18
D103	E-3	Q705	F-14
D104	G-3	Q706	G-14
D106	E-29	Q707	J-20
D107	F-4	Q708	B-16
D108	E-29	Q709	I-20
D201	K-28	Q710	J-22
D202	K-28	Q711	J-22
D203	I-28	Q712	K-19
D575	F-22	Q713	H-21
D576	F-22	Q714	K-18
D801	A-17	Q715	H-18
D802	A-15	Q716	C-21
D852	A-8	Q717	I-11
D901	H-25	Q718	I-21
D902	H-24	Q719	J-19
		Q720	J-19
IC102	G-28	Q721	J-19
IC103	E-4	Q722	J-18
IC105	G-4	Q723	H-23
IC201	K-30	Q724	I-23
IC202	K-24	Q725	I-23
IC203	J-25	Q727	F-12
IC204	J-26	Q728	H-11
IC205	J-28	Q734	H-22
IC207	I-29	Q801	B-15
IC575	F-22	Q802	A-17
IC576	E-22	Q803	B-19
IC577	G-23	Q804	B-13
IC578	G-23	Q805	B-14
IC701	G-13	Q806	B-15
IC702	H-19	Q807	B-14
IC703	H-18	Q851	A-7
IC704	F-19	Q852	A-7
IC705	I-21	Q853	B-8
IC706	G-21	Q854	A-25
IC707	G-17	Q855	A-8
IC708	H-17	Q856	A-24
IC709	I-18	Q858	B-7
IC710	C-16	Q859	B-25
IC711	C-15	Q860	B-25
IC712	C-13	Q901	H-24
IC713	C-12	Q902	F-25
IC714	D-14	Q903	H-26
IC715	D-13	Q904	H-24
IC716	D-12	Q906	E-5
IC717	F-20	Q907	D-27
IC801	A-16	Q909	E-24
IC802	A-18	Q910	F-24
IC803	A-20	Q911	E-24
IC804	A-13	Q914	G-24
IC851	A-6	Q915	F-6
IC852	A-8	Q916	F-27
IC853	B-24	Q918	C-27
IC854	B-26	Q919	C-26
IC901	G-27	Q920	G-24
IC902	H-26		
IC903	H-7		
IC904	F-27		
IC905	G-6		
IC906	H-8		
IC907	I-6		
IC908	G-8		
Q101	F-4		
Q102	F-3		
Q103	F-3		
Q105	E-28		
Q201	J-2		
Q202	J-2		
Q203	J-31		
Q204	J-31		
Q205	K-13		
Q206	J-28		
Q207	K-28		
Q208	I-28		
Q209	J-28		
Q210	K-26		
Q211	K-6		
Q212	K-27		
Q213	K-27		
Q214	K-7		
Q215	K-27		
Q216	K-26		
Q574	D-21		
Q575	E-23		
Q576	E-23		
Q577	E-22		
Q578	F-22		
Q579	B-10		
Q580	C-10		
Q581	H-23		
Q582	H-22		
Q702	I-13		

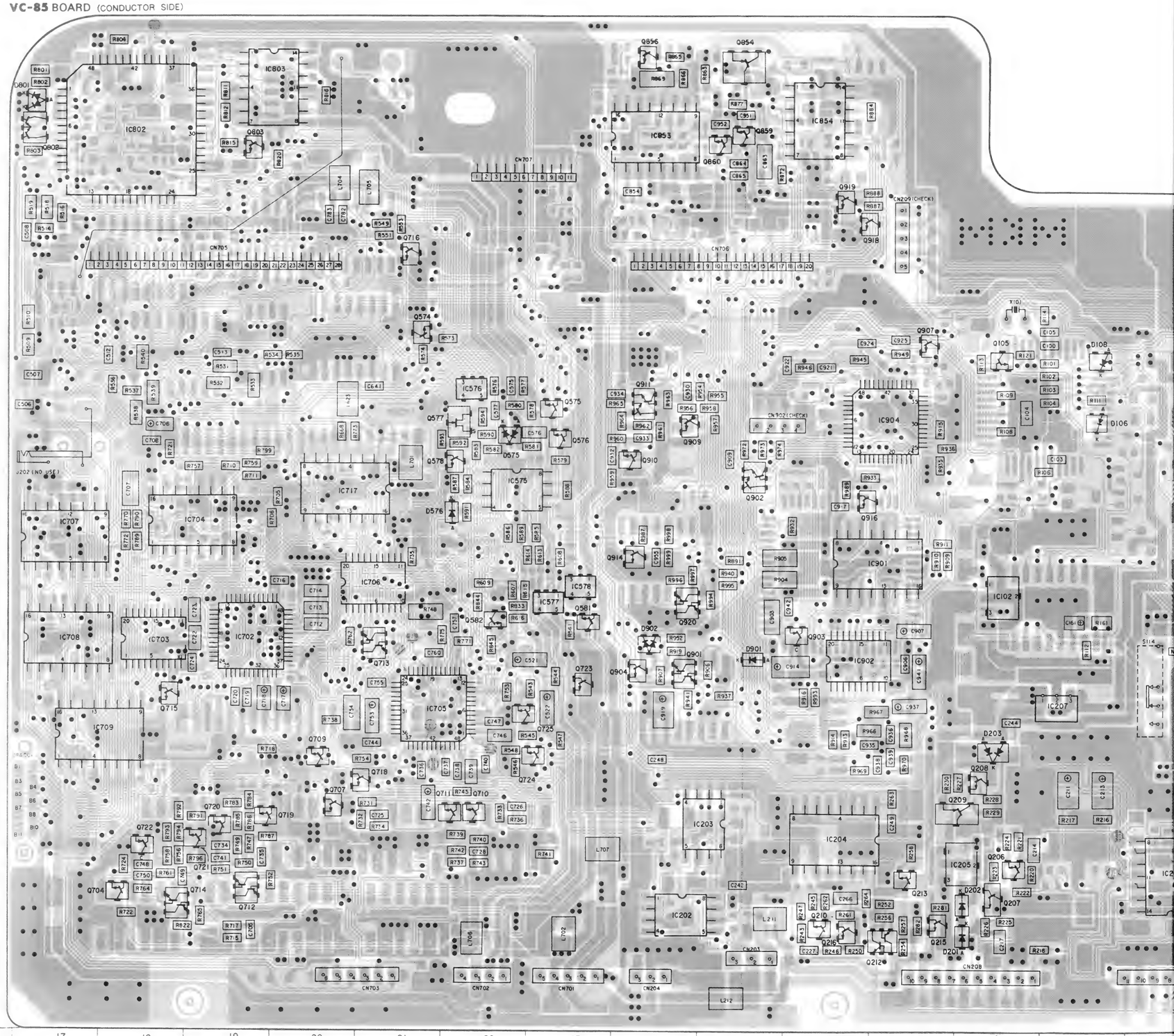
VC-85 BOARD (COMPONENT SIDE)

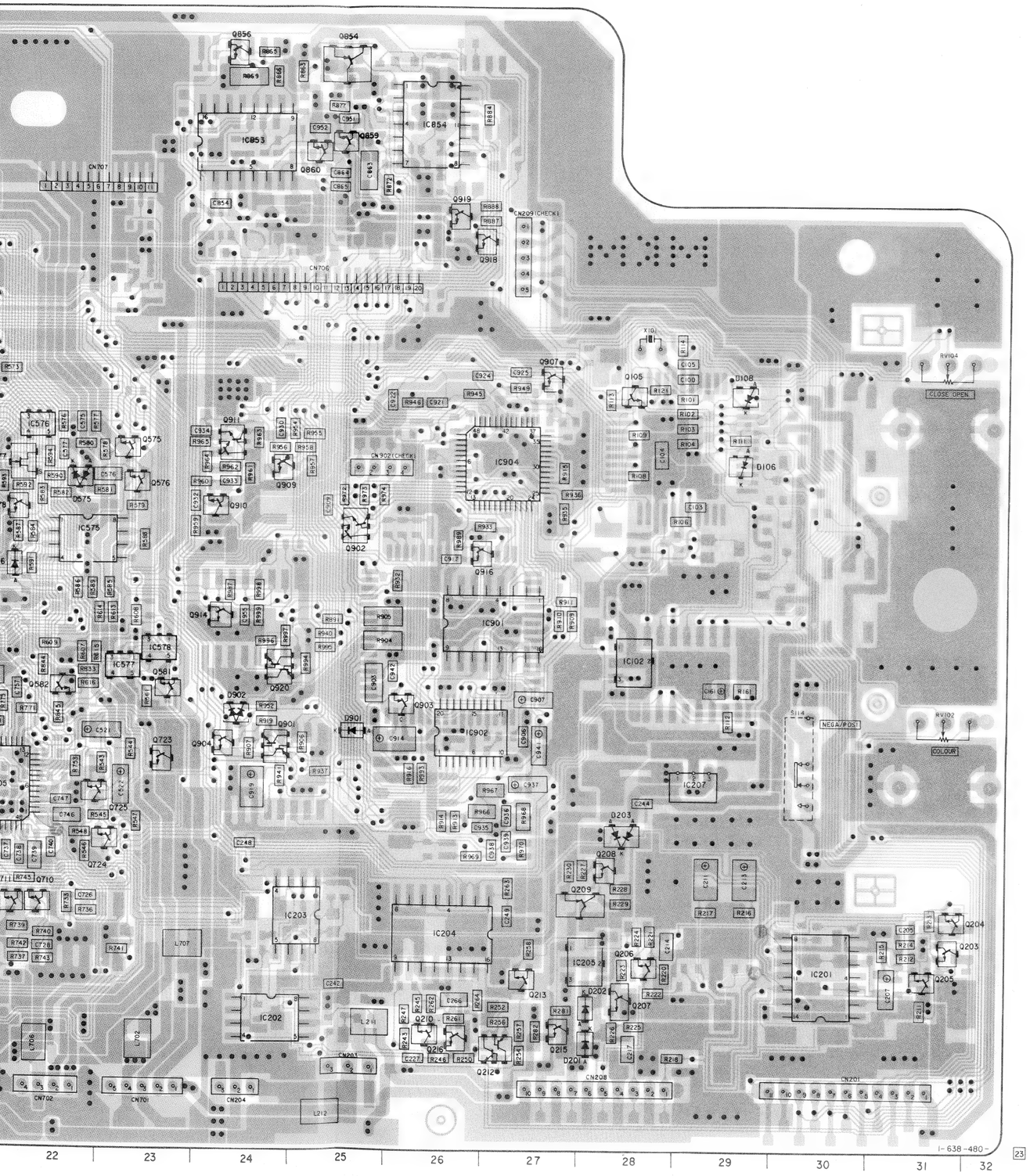


VC-85 BOARD (CONDUCTOR SIDE)

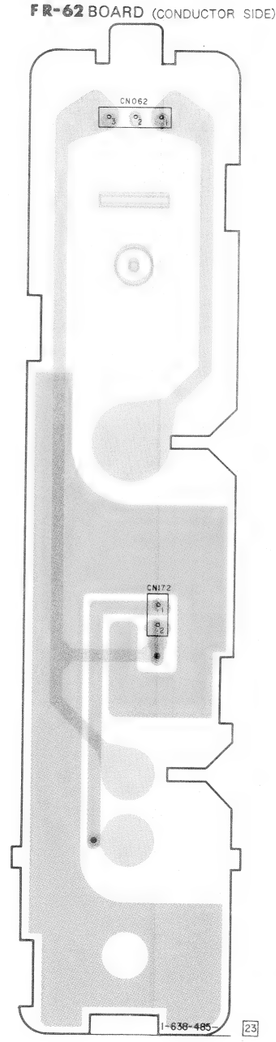
VC-85 BOARD (CONDUCTOR SIDE)







FR-62 BOARD (CONDUCTOR SIDE)



A-7062-931-A VC-85 BOARD, COMPLETE

****

(Ref.No 7,000 Series)

A-7068-193-A MX-7PH BOARD, COMPLETE (HIC)

< DIODE >

D101	8-719-404-35	DIODE	MA141WK
D102	8-719-404-35	DIODE	MA141WK
D103	8-719-928-13	DIODE	SLM13DW
D104	8-719-928-13	DIODE	SLM13DW
D105	8-719-404-35	DIODE	MA141WK
D107	8-719-404-46	DIODE	MA110
D108	8-719-404-35	DIODE	MA141WK
D201	8-719-404-46	DIODE	MA110
D202	8-719-404-46	DIODE	MA110
D203	8-719-400-18	DIODE	MA152WK
D575	8-719-800-76	DIODE	1SS226
D576	8-719-404-46	DIODE	MA110
D801	8-719-820-05	DIODE	1SS181
D802	8-719-404-46	DIODE	MA110
D852	8-719-404-46	DIODE	MA110
D901	8-719-404-46	DIODE	MA110
D902	8-719-820-05	DIODE	1SS181

< IC >

IC101	8-759-152-80	IC	uPD7508BGB-522
IC102	8-759-937-56	IC	S-8054ALB-LM-S
IC103	8-759-926-28	IC	SN74HC174ANS
IC201	8-752-009-51	IC	CX20095A
IC202	8-759-504-47	IC	TL026CPS
IC203	8-759-983-69	IC	LM358PS
IC204	8-759-611-65	IC	MC74HC4053F
IC205	8-759-937-56	IC	S-8054ALB-LM-S
IC207	8-759-502-36	IC	S-81350HG
IC575	8-759-983-69	IC	LM358PS
IC576	8-759-234-77	IC	TC4S66F
IC577	8-759-234-77	IC	TC4S66F
IC578	8-759-234-77	IC	TC4S66F
IC702	8-752-034-21	IC	CXA1339R
IC703	8-759-946-00	IC	MB88341PFV
IC704	8-759-300-71	IC	TC4053BF
IC705	8-752-033-34	IC	CXA1072R
IC706	8-759-946-00	IC	MB88341PFV
IC707	8-759-300-71	IC	TC4053BF
IC708	8-759-300-71	IC	TC4053BF
IC709	8-759-300-71	IC	TC4053BF
IC710	8-759-100-93	IC	uPC393G2
IC711	8-759-300-71	IC	TC4053BF
IC712	8-759-100-93	IC	uPC393G2
IC713	8-759-200-67	IC	TC4001BF
IC714	8-759-300-71	IC	TC4053BF
IC715	8-759-100-93	IC	uPC393G2
IC716	8-759-300-71	IC	TC4053BF
IC717	8-759-300-71	IC	TC4053BF
IC720	8-759-234-77	IC	TC4S66F
IC801	8-759-937-56	IC	S-8054ALB-LM-S
IC802	8-759-037-60	IC	MC68HC05N4-SC406667
IC803	8-759-983-74	IC	LM324NS
IC804	8-759-008-67	IC	MC14066BF
IC851	8-759-500-11	IC	MM1036XF
IC852	8-759-983-69	IC	LM358PS
IC853	8-759-030-35	IC	MPC1725M
IC854	8-759-983-74	IC	LM324NS
IC901	8-752-334-49	IC	CXD1172AM
IC902	8-759-946-00	IC	MB88341PFV
IC903	8-759-940-45	IC	S-8054HN-CB
IC904	8-752-326-18	IC	CXD1204R
IC905	8-759-031-86	IC	MC68HC05C4-SC411531
IC906	8-759-300-71	IC	TC4053BF
IC907	8-759-983-74	IC	LM324NS
IC908	8-759-009-06	IC	MC14052BF

< TRANSISTOR >

Q101	8-729-905-18	TRANSISTOR	DTC144EU
Q102	8-729-907-00	TRANSISTOR	DTC114EU
Q103	8-729-907-00	TRANSISTOR	DTC114EU
Q105	8-729-905-18	TRANSISTOR	DTC144EU
Q201	8-729-905-35	TRANSISTOR	2SC4081-R
Q202	8-729-905-35	TRANSISTOR	2SC4081-R
Q203	8-729-905-35	TRANSISTOR	2SC4081-R
Q204	8-729-905-35	TRANSISTOR	2SC4081-R
Q205	8-729-905-35	TRANSISTOR	2SC4081-R
Q206	8-729-905-35	TRANSISTOR	2SC4081-R
Q207	8-729-230-49	TRANSISTOR	2SC2712-YG
Q208	8-729-905-35	TRANSISTOR	2SC4081-R
Q209	8-729-106-66	TRANSISTOR	2SB1115A
Q210	8-729-905-35	TRANSISTOR	2SC4081-R
Q211	8-729-905-23	TRANSISTOR	2SA1576-R
Q212	8-729-402-84	TRANSISTOR	XN4601
Q213	8-729-905-35	TRANSISTOR	2SC4081-R
Q214	8-729-905-23	TRANSISTOR	2SA1576-R
Q215	8-729-905-35	TRANSISTOR	2SC4081-R
Q216	8-729-905-35	TRANSISTOR	2SC4081-R
Q574	8-729-905-35	TRANSISTOR	2SC4081-R
Q575	8-729-905-35	TRANSISTOR	2SC4081-R
Q576	8-729-905-35	TRANSISTOR	2SC4081-R
Q577	8-765-420-02	TRANSISTOR	2SK300-3
Q578	8-729-905-18	TRANSISTOR	DTC144EU
Q579	8-729-905-35	TRANSISTOR	2SC4081-R
Q580	8-729-402-84	TRANSISTOR	XN4601
Q581	8-729-905-18	TRANSISTOR	DTC144EU
Q582	8-729-905-35	TRANSISTOR	2SC4081-R
Q702	8-729-905-23	TRANSISTOR	2SA1576-R
Q703	8-729-905-35	TRANSISTOR	2SC4081-R
Q704	8-729-905-35	TRANSISTOR	2SC4081-R
Q705	8-729-905-35	TRANSISTOR	2SC4081-R
Q706	8-729-402-78	TRANSISTOR	XN6401
Q707	8-729-905-35	TRANSISTOR	2SC4081-R
Q708	8-729-403-10	TRANSISTOR	XN6215
Q709	8-729-905-35	TRANSISTOR	2SC4081-R
Q710	8-729-905-35	TRANSISTOR	2SC4081-R
Q711	8-729-905-35	TRANSISTOR	2SC4081-R
Q712	8-729-402-84	TRANSISTOR	XN4601
Q713	8-729-402-81	TRANSISTOR	XN4501
Q714	8-729-402-84	TRANSISTOR	XN4601
Q715	8-729-905-35	TRANSISTOR	2SC4081-R
Q716	8-729-905-18	TRANSISTOR	DTC144EU
Q717	8-729-905-23	TRANSISTOR	2SA1576-R
Q718	8-729-905-35	TRANSISTOR	2SC4081-R
Q719	8-729-905-35	TRANSISTOR	2SC4081-R
Q720	8-729-905-23	TRANSISTOR	2SA1576-R
Q721	8-729-905-35	TRANSISTOR	2SC4081-R
Q722	8-729-905-23	TRANSISTOR	2SA1576-R
Q723	8-729-905-35	TRANSISTOR	2SC4081-R
Q724	8-729-905-35	TRANSISTOR	2SC4081-R
Q727	8-729-905-23	TRANSISTOR	2SA1576-R
Q728	8-729-905-18	TRANSISTOR	DTC144EU
Q801	8-729-403-10	TRANSISTOR	XN6215
Q802	8-729-403-07	TRANSISTOR	XN1213
Q803	8-729-905-35	TRANSISTOR	2SC4081-R
Q804	8-729-805-42	TRANSISTOR	2SC3859
Q805	8-729-805-42	TRANSISTOR	2SC3859
Q806	8-729-805-42	TRANSISTOR	2SC3859
Q807	8-729-402-78	TRANSISTOR	XN6401
Q851	8-729-403-07	TRANSISTOR	XN1213
Q852	8-729-905-23	TRANSISTOR	2SA1576-R
Q853	8-729-402-84	TRANSISTOR	XN4601
Q854	8-729-106-60	TRANSISTOR	2SB1115A
Q855	8-729-905-35	TRANSISTOR	2SC4081-R
Q856	8-729-905-15	TRANSISTOR	DTC144WU
Q858	8-729-402-84	TRANSISTOR	XN4601
Q859	8-729-905-18	TRANSISTOR	DTC144EU
Q860	8-729-905-18	TRANSISTOR	DTC144EU
Q901	8-729-402-84	TRANSISTOR	XN4601
Q902	8-729-403-10	TRANSISTOR	XN6215
Q903	8-729-905-23	TRANSISTOR	2SA1576-R
Q904	8-729-905-18	TRANSISTOR	DTC144EU
Q906	8-729-905-35	TRANSISTOR	2SC4081-R
Q907	8-729-905-35	TRANSISTOR	2SC4081-R
Q909	8-729-905-35	TRANSISTOR	2SC4081-R
Q910	8-729-905-35	TRANSISTOR	2SC4081-R
Q911	8-729-402-19	TRANSISTOR	XN6501
Q914	8-729-905-18	TRANSISTOR	DTC144EU
Q915	8-729-905-18	TRANSISTOR	DTC144EU
Q916	8-729-905-18	TRANSISTOR	DTC144EU
Q918	8-729-905-18	TRANSISTOR	DTC144EU
Q919	8-729-905-18	TRANSISTOR	DTC144EU
Q920	8-729-402-84	TRANSISTOR	XN4601

VC-85 (CAMERA PROCESS, SYSTEM CONTROL), FR-62 (FLUORESCENT DISPLAY) PRINTED WIRING BOARDS

— Ref. No. FR-62 BOARD: 3000 series, VC-85 BOARD: 7000 series —

* A-7062-931-A VC-85 BOARD, COMPLETE
****
(Ref.No 7,000 Series)

A-7068-193-A MX-7PH BOARD, COMPLETE (HIC)

< DIODE >

D101	8-719-404-35	DIODE MA141WK
D102	8-719-404-35	DIODE MA141WK
D103	8-719-928-13	DIODE SLM13DW
D104	8-719-928-13	DIODE SLM13DW
D106	8-719-404-35	DIODE MA141WK
D107	8-719-404-46	DIODE MA110
D108	8-719-404-35	DIODE MA141WK
D201	8-719-404-46	DIODE MA110
D202	8-719-404-46	DIODE MA110
D203	8-719-400-18	DIODE MA152WK
D575	8-719-800-76	DIODE 1SS226
D576	8-719-404-46	DIODE MA110
D801	8-719-820-05	DIODE 1SS181
D802	8-719-404-46	DIODE MA110
D852	8-719-404-46	DIODE MA110
D901	8-719-404-46	DIODE MA110
D902	8-719-820-05	DIODE 1SS181

< IC >

IC101	8-759-152-80	IC uPD7508BGB-522
IC102	8-759-937-56	IC S-8054ALB-LM-S
IC103	8-759-926-28	IC SN74HC174ANS
IC201	8-752-009-51	IC CX20095A
IC202	8-759-504-47	IC TL026CPS
IC203	8-759-983-69	IC LM358PS
IC204	8-759-011-65	IC MC74HC4053F
IC205	8-759-937-56	IC S-8054ALB-LM-S
IC207	8-759-502-36	IC S-81350HG
IC575	8-759-983-69	IC LM358PS
IC576	8-759-234-77	IC TC4S66F
IC577	8-759-234-77	IC TC4S66F
IC578	8-759-234-77	IC TC4S66F
IC702	8-752-034-21	IC CXA1339R
IC703	8-759-946-00	IC MB88341PFV
IC704	8-759-300-71	IC TC4053BF
IC705	8-752-033-34	IC CXA1072R
IC706	8-759-946-00	IC MB88341PFV
IC707	8-759-300-71	IC TC4053BF
IC708	8-759-300-71	IC TC4053BF
IC709	8-759-300-71	IC TC4053BF
IC710	8-759-100-93	IC uPC393G2
IC711	8-759-300-71	IC TC4053BF
IC712	8-759-100-93	IC uPC393G2
IC713	8-759-200-67	IC TC4001BF
IC714	8-759-300-71	IC TC4053BF
IC715	8-759-100-93	IC uPC393G2
IC716	8-759-300-71	IC TC4053BF
IC717	8-759-300-71	IC TC4053BF
IC720	8-759-234-77	IC TC4S66F
IC801	8-759-937-56	IC S-8054ALB-LM-S
IC802	8-759-037-60	IC MC68HC05N4-SC406667
IC803	8-759-983-74	IC LM324NS
IC804	8-759-008-67	IC MC14066BF
IC851	8-759-500-11	IC MM1036XF
IC852	8-759-983-69	IC LM358PS
IC853	8-759-030-35	IC MPC1725M
IC854	8-759-983-74	IC LM324NS
IC901	8-752-334-49	IC CXD1172AM
IC902	8-759-946-00	IC MB88341PFV
IC903	8-759-940-45	IC S-8054HN-CB
IC904	8-752-326-18	IC CXD1204R
IC905	8-759-031-86	IC MC68HC05C4-SC411531
IC906	8-759-300-71	IC TC4053BF
IC907	8-759-983-74	IC LM324NS
IC908	8-759-009-06	IC MC14052BF

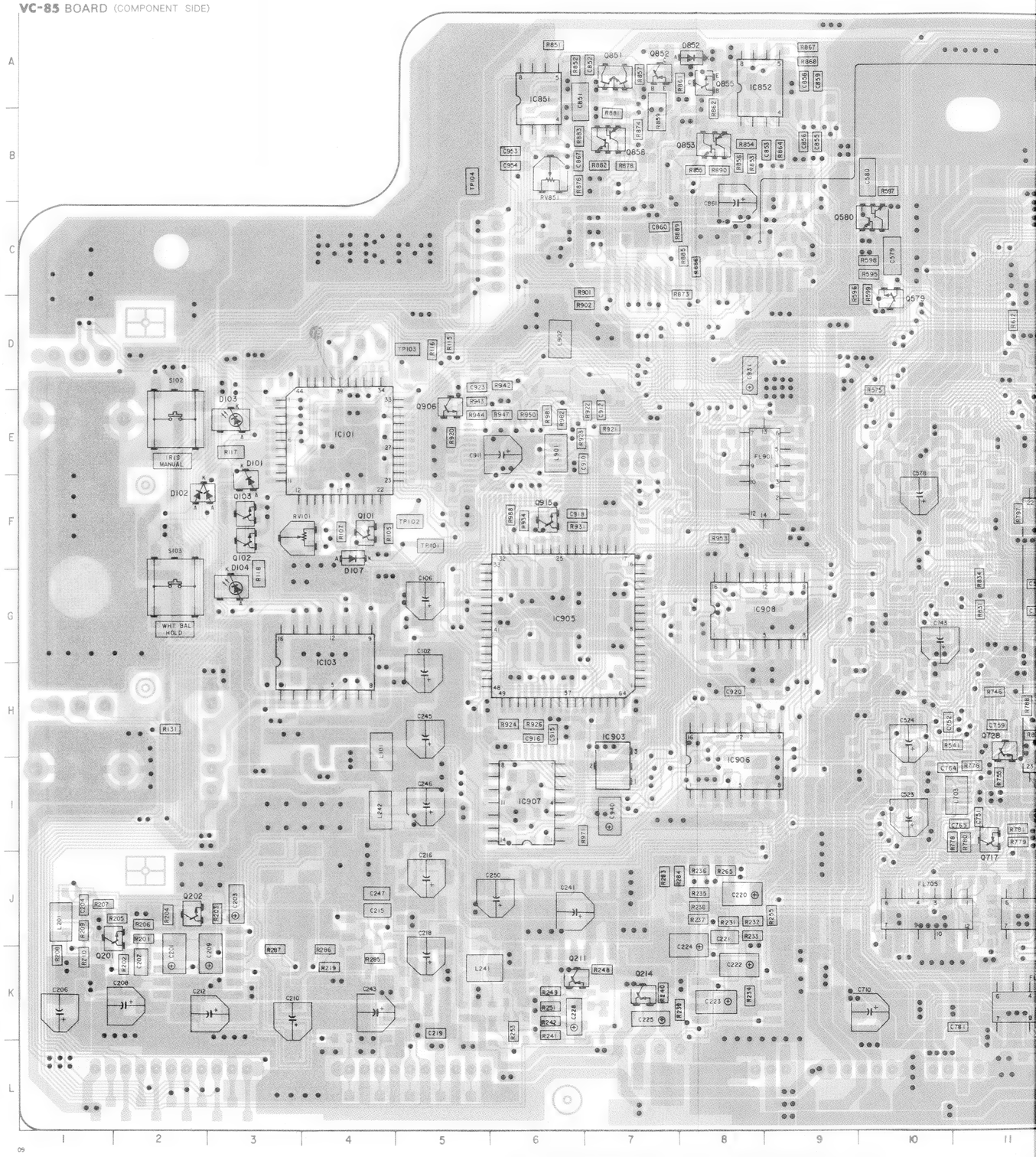
< TRANSISTOR >

Q101	8-729-905-18	TRANSISTOR DTC144EU
Q102	8-729-907-00	TRANSISTOR DTC114EU
Q103	8-729-907-00	TRANSISTOR DTC114EU
Q105	8-729-905-18	TRANSISTOR DTC144EU
Q201	8-729-905-35	TRANSISTOR 2SC4081-R
Q202	8-729-905-35	TRANSISTOR 2SC4081-R
Q203	8-729-905-35	TRANSISTOR 2SC4081-R
Q204	8-729-905-35	TRANSISTOR 2SC4081-R
Q205	8-729-905-35	TRANSISTOR 2SC4081-R
Q206	8-729-905-35	TRANSISTOR 2SC4081-R
Q207	8-729-230-49	TRANSISTOR 2SC2712-YG
Q208	8-729-905-35	TRANSISTOR 2SC4081-R
Q209	8-729-106-60	TRANSISTOR 2SB1115A
Q210	8-729-905-35	TRANSISTOR 2SC4081-R
Q211	8-729-905-23	TRANSISTOR 2SA1576-R
Q212	8-729-402-84	TRANSISTOR XN4601
Q213	8-729-905-35	TRANSISTOR 2SC4081-R
Q214	8-729-905-23	TRANSISTOR 2SA1576-R
Q215	8-729-905-35	TRANSISTOR 2SC4081-R
Q216	8-729-905-35	TRANSISTOR 2SC4081-R
Q574	8-729-905-35	TRANSISTOR 2SC4081-R
Q575	8-729-905-35	TRANSISTOR 2SC4081-R
Q576	8-729-905-35	TRANSISTOR 2SC4081-R
Q577	8-765-420-02	TRANSISTOR 2SK300-3
Q578	8-729-905-18	TRANSISTOR DTC144EU
Q579	8-729-905-35	TRANSISTOR 2SC4081-R
Q580	8-729-402-84	TRANSISTOR XN4601
Q581	8-729-905-18	TRANSISTOR DTC144EU
Q582	8-729-905-35	TRANSISTOR 2SC4081-R
Q702	8-729-905-23	TRANSISTOR 2SA1576-R
Q703	8-729-905-35	TRANSISTOR 2SC4081-R
Q704	8-729-905-35	TRANSISTOR 2SC4081-R
Q705	8-729-905-35	TRANSISTOR 2SC4081-R
Q706	8-729-402-78	TRANSISTOR XN6401
Q707	8-729-905-35	TRANSISTOR 2SC4081-R
Q708	8-729-403-10	TRANSISTOR XN6215
Q709	8-729-905-35	TRANSISTOR 2SC4081-R
Q710	8-729-905-35	TRANSISTOR 2SC4081-R
Q711	8-729-905-35	TRANSISTOR 2SC4081-R
Q712	8-729-402-84	TRANSISTOR XN4601
Q713	8-729-402-81	TRANSISTOR XN4501
Q714	8-729-402-84	TRANSISTOR XN4601
Q715	8-729-905-35	TRANSISTOR 2SC4081-R
Q716	8-729-905-18	TRANSISTOR DTC144EU
Q717	8-729-905-23	TRANSISTOR 2SA1576-R
Q718	8-729-905-35	TRANSISTOR 2SC4081-R
Q719	8-729-905-35	TRANSISTOR 2SC4081-R
Q720	8-729-905-23	TRANSISTOR 2SA1576-R
Q721	8-729-905-35	TRANSISTOR 2SC4081-R
Q722	8-729-905-23	TRANSISTOR 2SA1576-R
Q723	8-729-905-35	TRANSISTOR 2SC4081-R
Q724	8-729-905-35	TRANSISTOR 2SC4081-R
Q727	8-729-905-23	TRANSISTOR 2SA1576-R
Q728	8-729-905-18	TRANSISTOR DTC144EU
Q801	8-729-403-10	TRANSISTOR XN6215
Q802	8-729-403-07	TRANSISTOR XN1213
Q803	8-729-905-35	TRANSISTOR 2SC4081-R
Q804	8-729-805-42	TRANSISTOR 2SC3859
Q805	8-729-805-42	TRANSISTOR 2SC3859
Q806	8-729-805-42	TRANSISTOR 2SC3859
Q807	8-729-402-78	TRANSISTOR XN6401
Q851	8-729-403-07	TRANSISTOR XN1213
Q852	8-729-905-23	TRANSISTOR 2SA1576-R
Q853	8-729-402-84	TRANSISTOR XN4601
Q854	8-729-106-60	TRANSISTOR 2SB1115A
Q855	8-729-905-35	TRANSISTOR 2SC4081-R
Q856	8-729-905-15	TRANSISTOR DTC144WU
Q858	8-729-402-84	TRANSISTOR XN4601
Q859	8-729-905-18	TRANSISTOR DTC144EU
Q860	8-729-905-18	TRANSISTOR DTC144EU
Q901	8-729-402-84	TRANSISTOR XN4601
Q902	8-729-403-10	TRANSISTOR XN6215
Q903	8-729-905-23	TRANSISTOR 2SA1576-R
Q904	8-729-905-18	TRANSISTOR DTC144EU
Q906	8-729-905-35	TRANSISTOR 2SC4081-R
Q907	8-729-905-35	TRANSISTOR 2SC4081-R
Q909	8-729-905-35	TRANSISTOR 2SC4081-R
Q910	8-729-905-35	TRANSISTOR 2SC4081-R
Q911	8-729-402-19	TRANSISTOR XN6501
Q914	8-729-905-18	TRANSISTOR DTC144EU
Q915	8-729-905-18	TRANSISTOR DTC144EU
Q916	8-729-905-18	TRANSISTOR DTC144EU
Q918	8-729-905-18	TRANSISTOR DTC144EU
Q919	8-729-905-18	TRANSISTOR DTC144EU
Q920	8-729-402-84	TRANSISTOR XN4601

VC-85 BOARD

D101	E-3	Q703	F-14
D102	F-2	Q704	K-18
D103	E-3	Q705	F-14
D104	G-3	Q706	G-14
D106	E-29	Q707	J-20
D107	F-4	Q708	B-16
D108	E-29	Q709	I-20
D201	K-28	Q710	J-22
D202	K-28	Q711	J-22
D203	I-28	Q712	K-19
D575	F-22	Q713	H-21
D576	F-22	Q714	K-18
D801	A-17	Q715	H-18
D802	A-15	Q716	C-21
D852	A-8	Q717	I-11
D901	H-25	Q718	I-21
D902	H-24	Q719	J-19
		Q720	J-19
IC102	G-28	Q721	J-19
IC103	E-4	Q722	J-18
IC105	G-4	Q723	H-23
IC201	K-30	Q724	I-23
IC202	K-24	Q725	I-23
IC203	J-25	Q727	F-12
IC204	J-26	Q728	H-11
IC205	J-28	Q734	H-22
IC207	I-29	Q801	B-15
IC575	F-22	Q802	A-17
IC576	E-22	Q803	B-19
IC577	G-23	Q804	B-13
IC578	G-23	Q805	B-14
IC701	G-13	Q806	B-15
IC702	H-19	Q807	B-14
IC703	H-18	Q851	A-7
IC704	F-19	Q852	A-7
IC705	I-21	Q853	B-8
IC706	G-21	Q854	A-25
IC707	G-17	Q855	A-8
IC708	H-17	Q856	A-24
IC709	I-18	Q858	B-7
IC710	C-16	Q859	B-25
IC711	C-15	Q860	B-25
IC712	C-13	Q901	H-24
IC713	C-12	Q902	F-25
IC714	D-14	Q903	H-26
IC715	D-13	Q904	H-24
IC716	D-12	Q906	E-5
IC717	F-20	Q907	D-27
IC801	A-16	Q909	E-24
IC802	A-18	Q910	F-24
IC803	A-20	Q911	E-24
IC804	A-13	Q914	G-24
IC851	A-6	Q915	F-6
IC852	A-8	Q916	F-27
IC853	B-24	Q918	C-27
IC854	B-26	Q919	C-26
IC901	G-27	Q920	G-24
IC902	H-26		
IC903	H-7		
IC904	F-27		
IC905	G-6		
IC906	H-8		
IC907	I-6		
IC908	G-8		
Q101	F-4		
Q102	F-3		
Q103	F-3		
Q105	E-28		
Q201	J-2		
Q202	J-2		
Q203	J-31		
Q204	J-31		
Q205	K-13		
Q206	J-28		
Q207	K-26		
Q208	I-28		
Q209	J-28		
Q210	K-26		
Q211	K-6		
Q212	K-27		
Q213	K-27		
Q214	K-7		
Q215	K-27		
Q216	K-26		
Q574	D-21		
Q575	E-23		
Q576	E-23		
Q577	E-22		
Q578	F-22		
Q579	B-10		
Q580	C-10		
Q581	H-23		
Q582	H-22		
Q702	I-13		

VC-85 BOARD (COMPONENT SIDE)

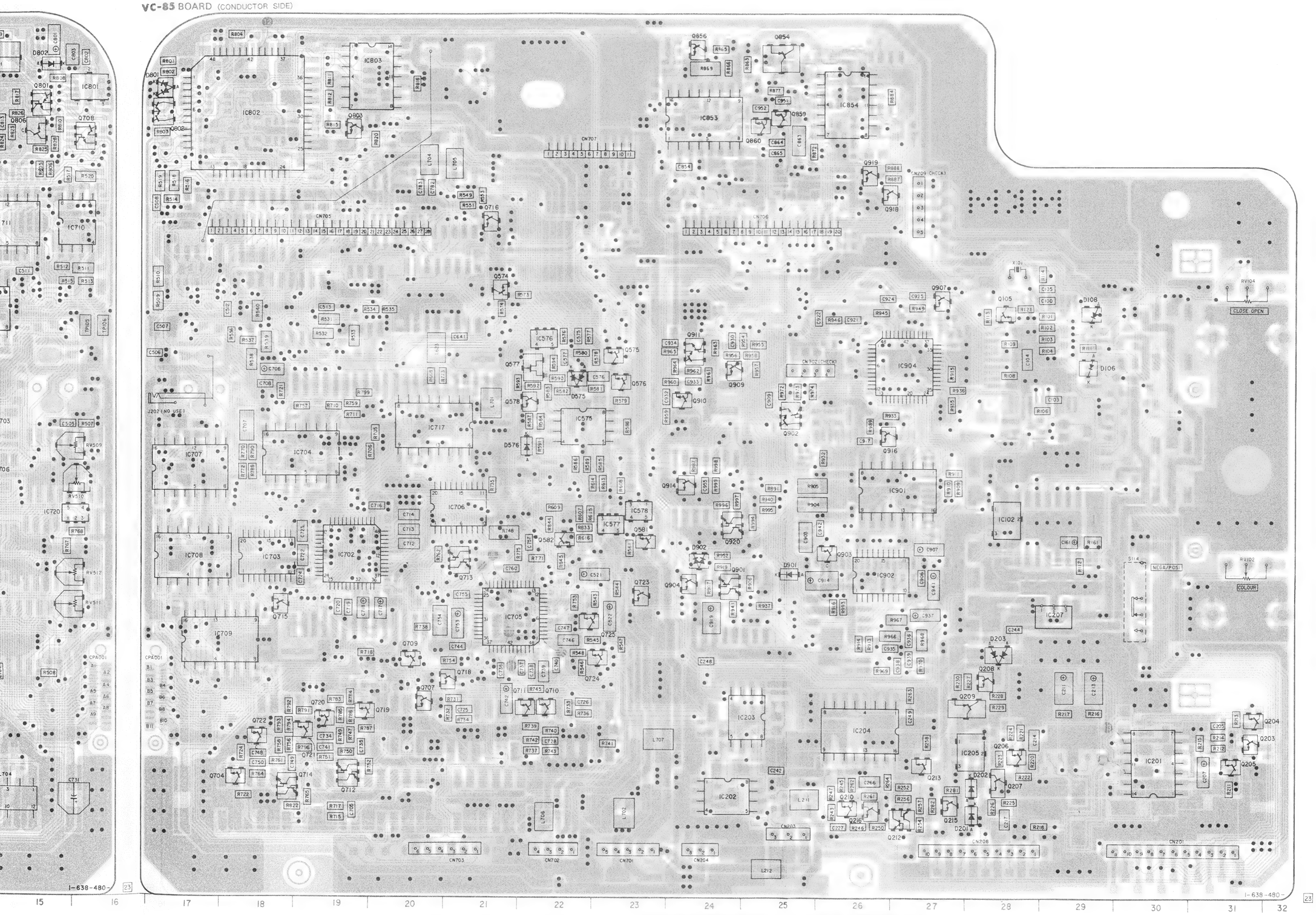


VC-65 BOARD (CONDUCTOR SIDE)

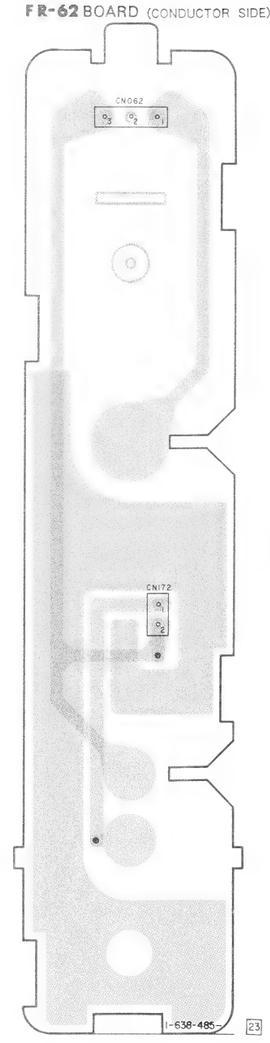
HIC701
MX-7 BOARD

1-638-480-

VC-85 BOARD (CONDUCTOR SIDE)



FR-62 BOARD (CONDUCTOR SIDE)



— Ref. No. VC-85 BOARD: 7000 series —

VC-85 (2/4) BOARD

CN707 11P

GND	11
GND	10
GND	9
GND	8
GND	7
GND	6
GND	5
GND	4
GND	3
GND	2
GND	1

TO GE-10 BOARD W603 FP-412 (FLEXIBLE)

(See Page 59)

CN706 20P

FOCUS ANODE	20
FOCUS F C	19
FOCUS N C	18
ZOOM W	17
ZOOM T	16
HALL (+)	15
HALL (-)	14
BIAS (+)	13
CONT (-)	12
CONT (+)	11
GND	10
DRIVE (+)	9
FOCUS F	8
FOCUS N	7
V SUB CONT	6
AGC REF	5
N.C	4
C L	3
AGC CONT F	2
WND	1

TO GE-10 BOARD W602 FP-378 (FLEXIBLE)

(See Page 60)

CN705 28P

DDS SI	28
DDS SCK	27
HD	26
VD	25
TG STB	24
-9V	23
15V	22
5V	21
GND	20
PG CONT	19
V SUB CHECK	18
AGC CONT R	17
XDL 1	16
XDL 2	15
N.C	14
I D	13
SYNC	12
BF	11
LALT	10
BLK	9
CLP 4	8
CLP 3	7
CLP 2	6
Y	5
S1	4
S2	3
CS OUT	2
4FSC	1

TO GE-10 BOARD W602 FP-378 (FLEXIBLE)

(See Page 60)

CN702 4P 1.5 JST L

15V	1
-9V	2
5V	3
GND	4

TO DC-DC CONVERTER CN2

(See Page 81)

Q574 BUFFER

4.8 Q574 2SC4081 1.6 0.9 R573 470 R574 1k

FL701

R707 1k C704 22p R708 4700

CLP2 CLP4 S2 S1 VSUB CSOUT I D SYNC BF LALT BLK Y

IC704 SELECTOR

R790 15k R770 15k R757 10k CL805 R789 18k R772 12k R759 18k CL809 2.7

IC704 MC14053BF

CL807 R705 18k R706 15k CL806 L707 47μH L701 47μH

Q575 AMP

R575 220 R579 2200 R576 3900 Q575 2SC4081 1.4 R577 1500 C575 0.1 F R578 330

Q576 AMP

Q576 2SC4081 4.8 1.0 0.4 C576 0.047 B R580 1k R581 1M

Q577 IRIS DET

Q577 2SK300 4.8 0 1.8 S R590 56k R582 56k C577 3900p B

Q575 MA143 Q576 MA110 R586 10k R585 100k R584 1M R583 1M R587 10k

C781 2200p B C782 2200p B C783 2200p B L704 1μH L705 1μH L706 1μH

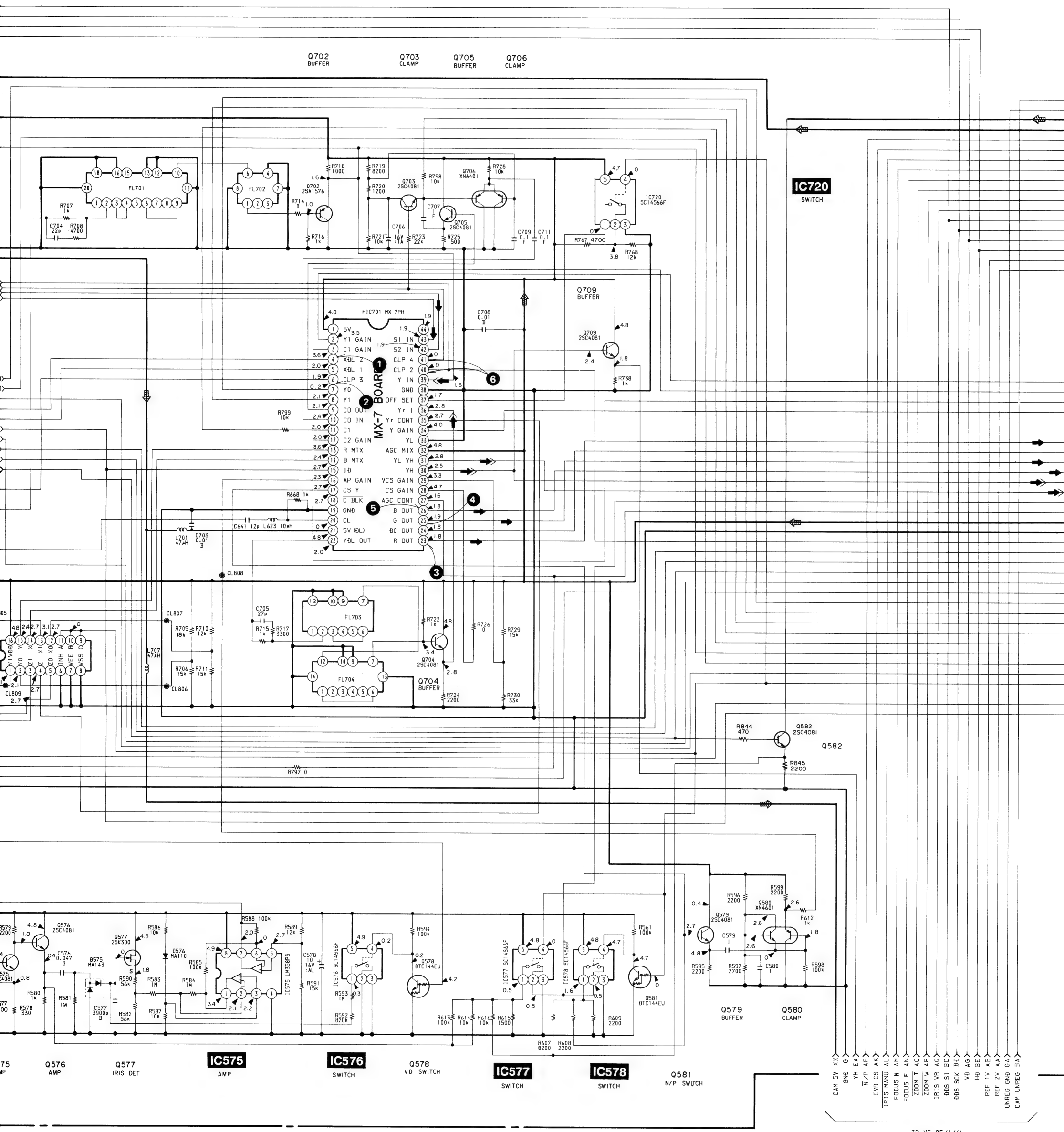
CL798 CL797

AF CK (4FSC) EB
WND EC
AGC CONT F ED
Y/ CONT EE
IRIS OUT EF
AGC REF EG
AGC CONT R CN
PG CONT CU
V SUB CONT EH
GND G
DRIVE (+) DA
CONT (+) DB
CONT (-) DC
BIAS (+) AA
HALL (-) AB
HALL (+) DF
ZOOM T DG
ZOOM W DH
FOCUS N DI
FOCUS F DJ
FOCUS ANODE BA
FOCUS N C DL
FOCUS F C DM

TO VC-85 (4/4) BOARD

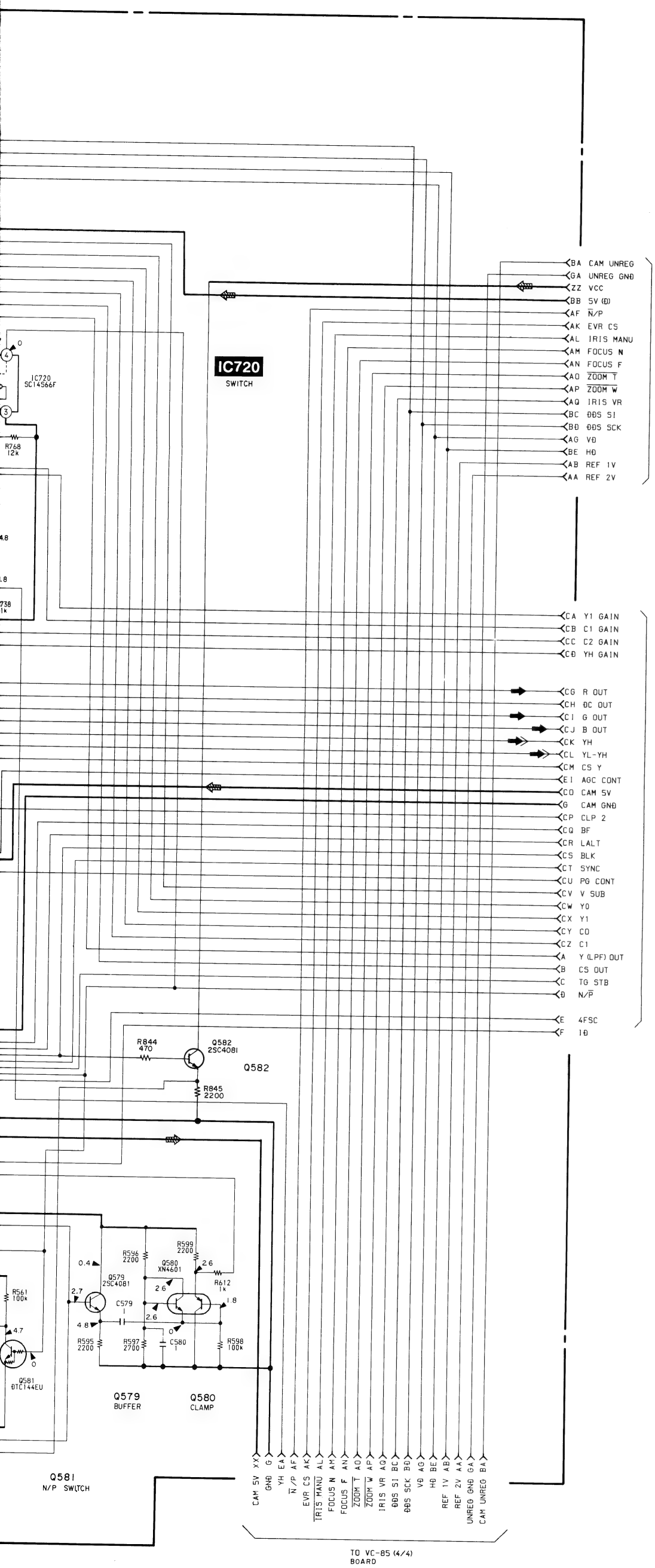
(See Page 94, 95)

09

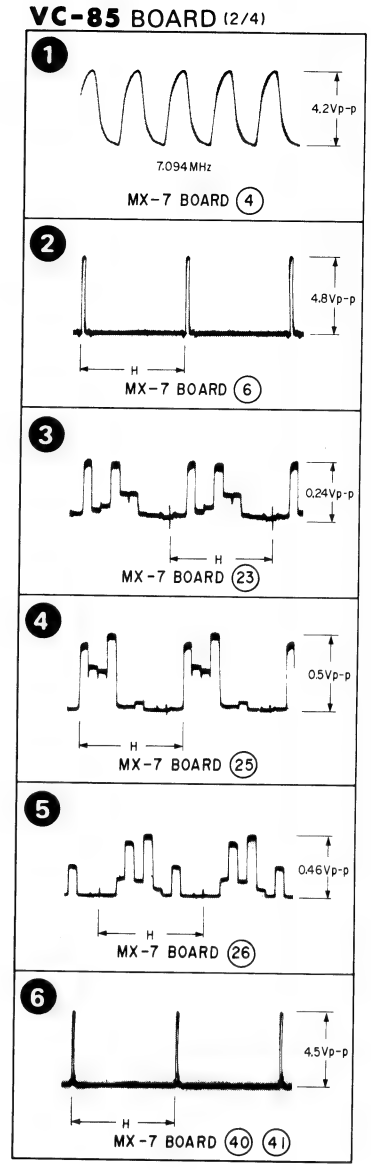


(See Page 94, 95)

16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27



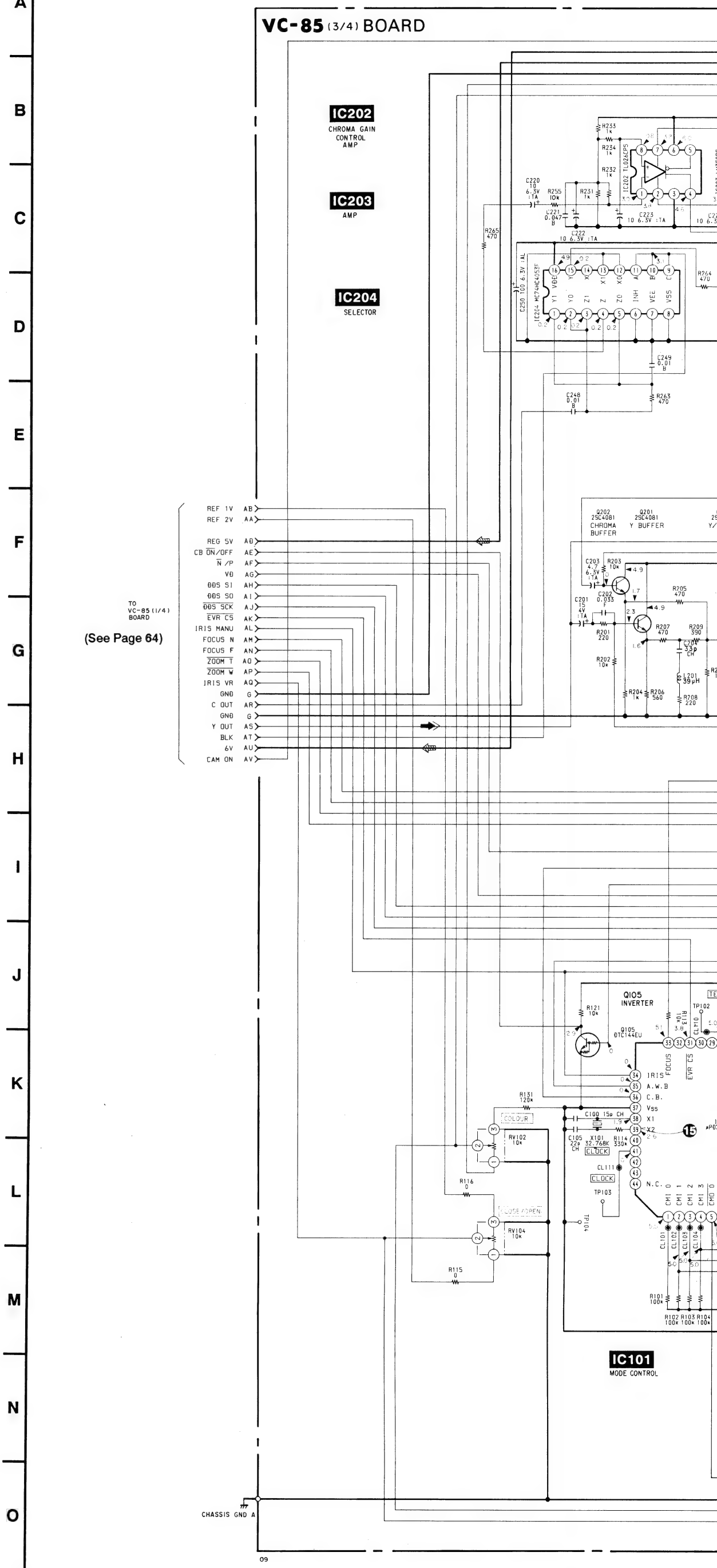
VC-85 BOARD (2/4)



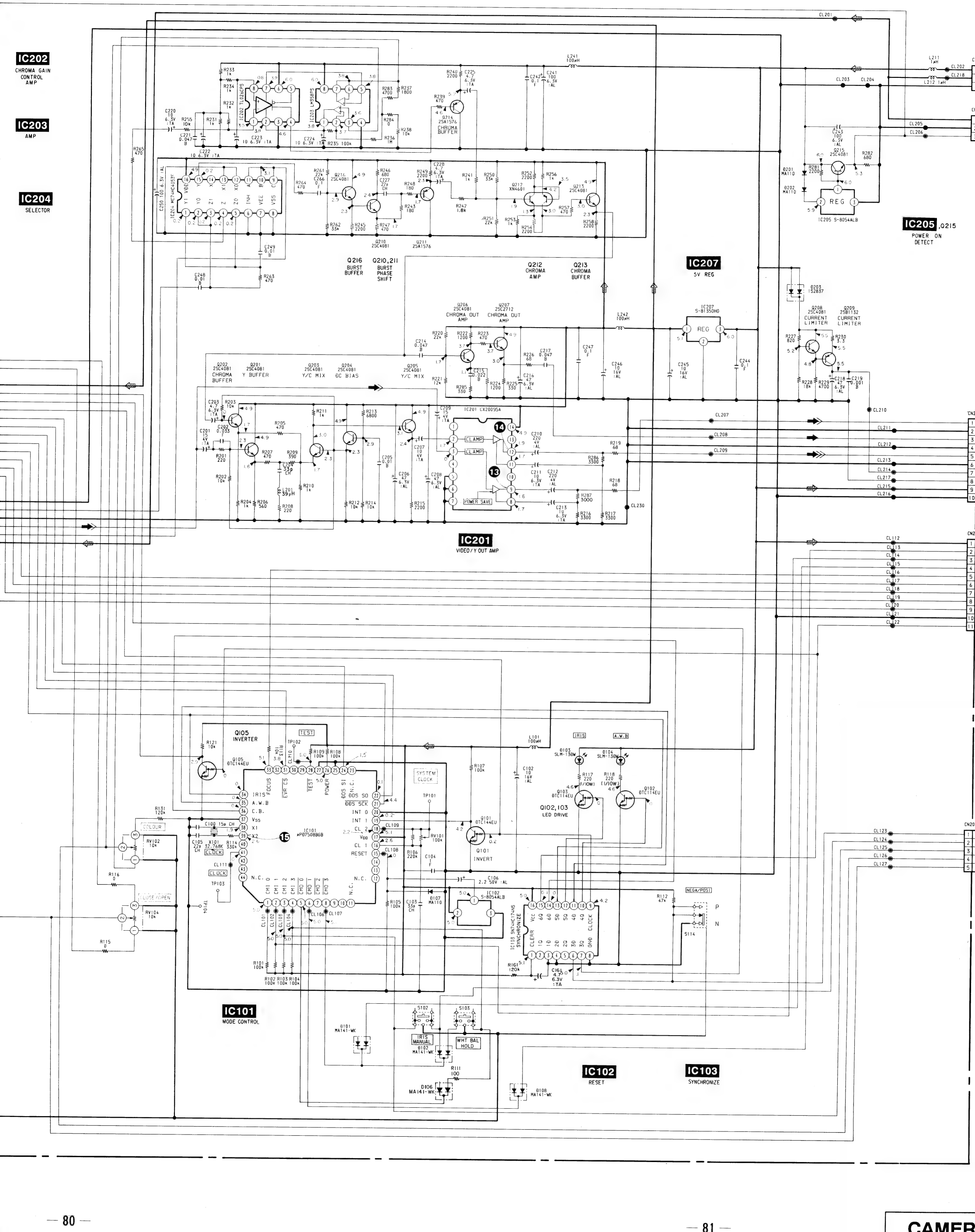
- **SIGNAL PATH**

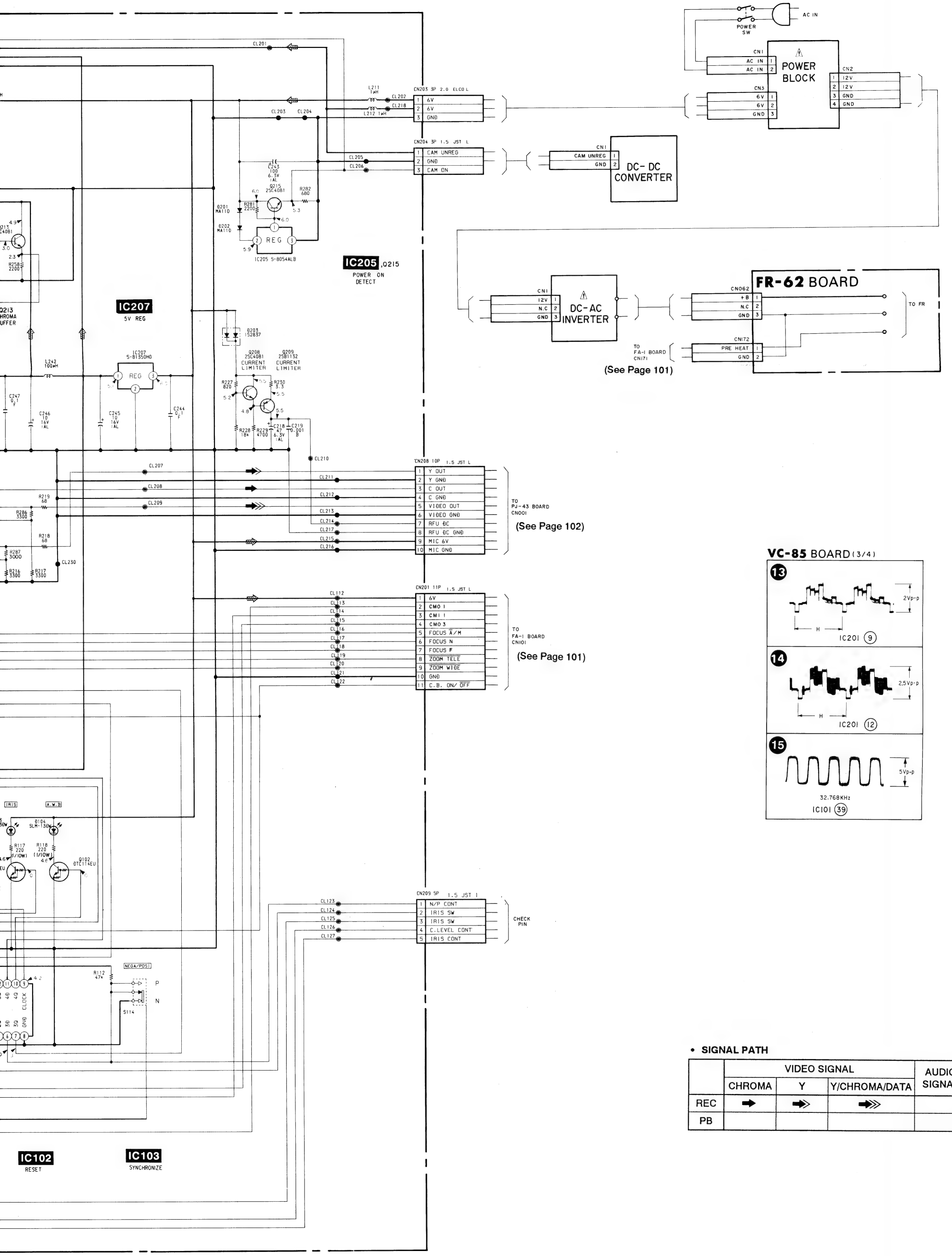
	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA/DATA	
REC	➡	➡		
PB				

— Ref. No. FR-62 BOARD: 3000 series, VC-85 BOARD: 7000 series —



35 (3/4) BOARD


IC202
CHROMA GAIN CONTROL AMP
IC203
AMP
IC204
SELECTOR
IC205 ,0215
POWER ON DETECT
IC207
5V REG
IC201
VIDEO / Y OUT AMP
IC101
MODE CONTROL
IC102
RESET
IC103
SYNCHRONIZE
Q216
BURST BUFFER
Q210,211
BURST PHASE SHIFT
Q212
CHROMA AMP
Q213
CHROMA BUFFER
Q214 2SA1576
CHROMA BUFFER
Q215 2SC4081
Q217 XN4601
Q206 2SC4081
CHROMA OUT AMP
Q207 2SC2712
CHROMA OUT AMP
Q208 2SC4081
CURRENT LIMITER
Q209 2SB1132
CURRENT LIMITER
Q202 2SC4081
CHROMA BUFFER
Q201 2SC4081
Y BUFFER
Q203 2SC4081
Y/C MIX
Q204 2SC4081
DC BIAS
Q205 2SC4081
Y/C MIX
Q105 INVERTER
Q102,103 LED DRIVE
Q101 INVERT
IC201 CX20095A
IC205 S-8054ALB
IC207 S-81350HG
IC102 S-8054ALB
IC103 SN74HC174NS SYNCHRONIZE
IC101 μPD7508BGB
REG
CLAMP
POWER SAVE
IRIS MANUAL
WHT BAL HOLD
SYSTEM CLOCK
TEST
IRIS
A.W.B
COLOUR
CLOCK
NEGA/POSI
CL201
CL202
CL203
CL204
CL205
CL206
CL207
CL208
CL209
CL210
CL211
CL212
CL213
CL214
CL215
CL216
CL217
CL218
CL230
CN20



VC-85 BOARD (3/4)

- **SIGNAL PATH**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA/DATA	
REC	➡	➡	➡	
PB				

CAMERA CAMERA

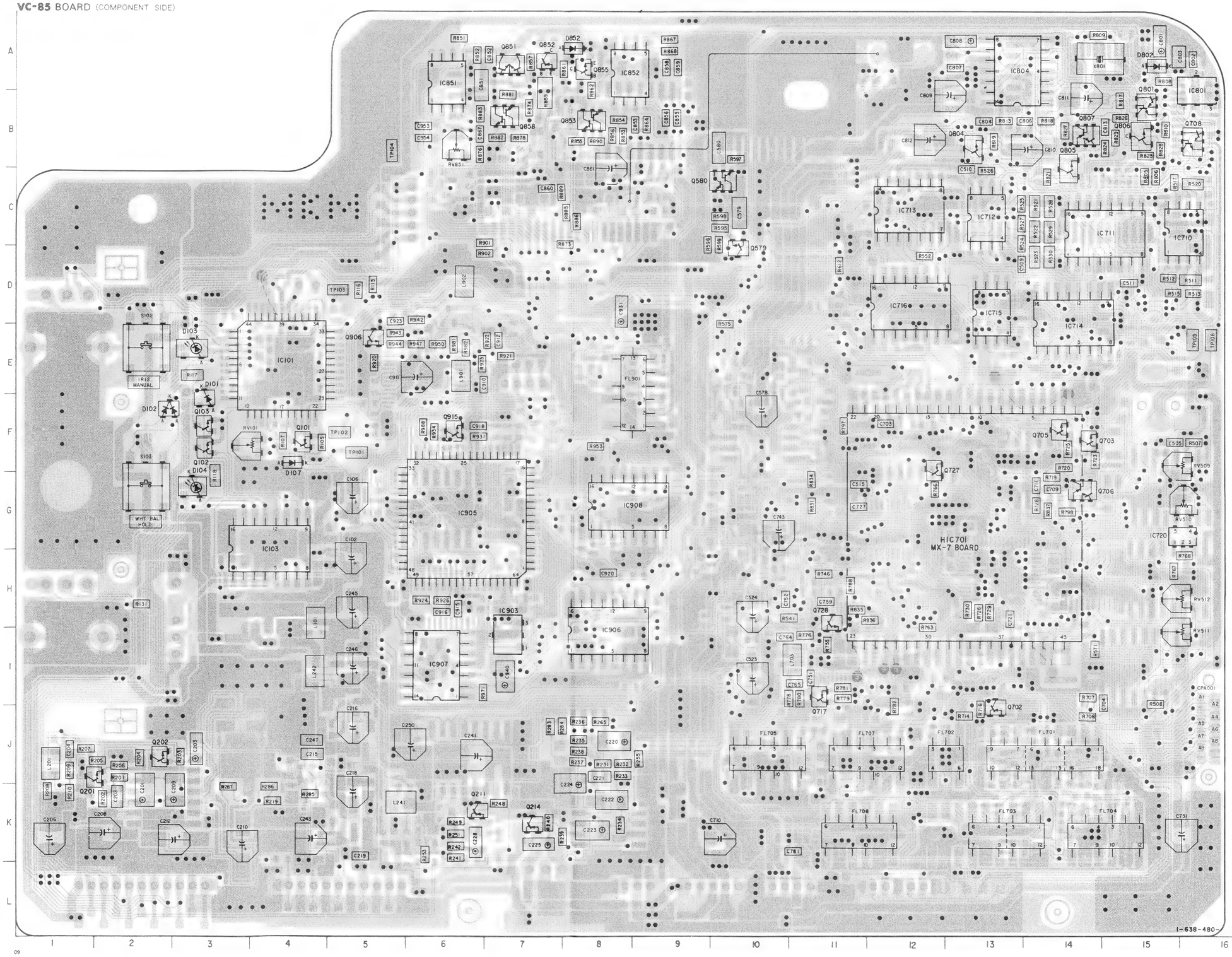
VC-85 (CAMERA PROCESS, SYSTEM CONTROL), FR-62 (FLUORESCENT DISPLAY) PRINTED WIRING BOARDS

— Ref. No. FR-62 BOARD: 3000 series, VC-85 BOARD: 7000 series —

VC-85 BOARD

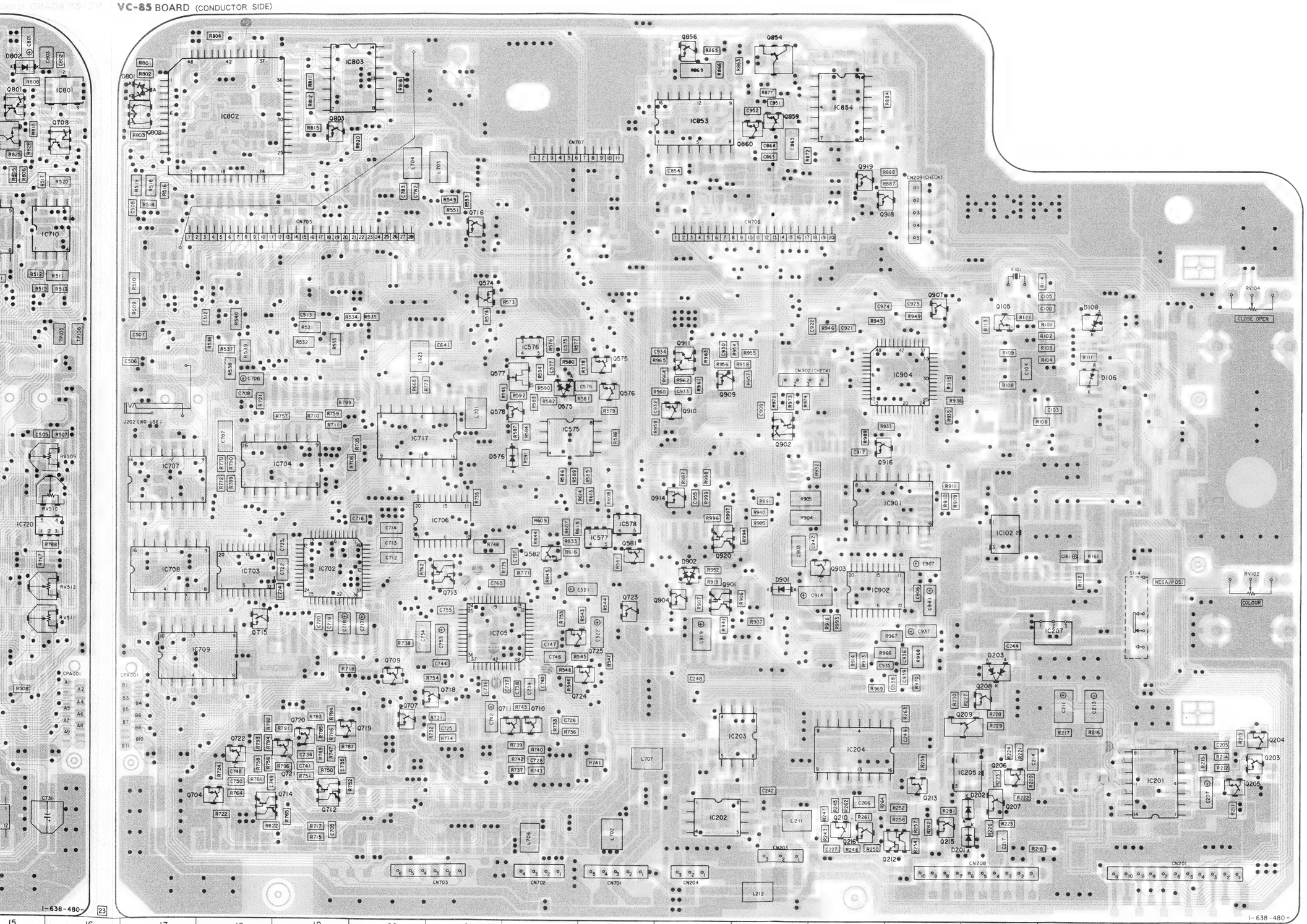
D101	E-3	Q703	F-14
D102	F-2	Q704	K-18
D103	E-3	Q705	F-14
D104	G-3	Q706	G-14
D106	E-29	Q707	J-20
D107	F-4	Q708	B-16
D108	E-29	Q709	I-20
D201	K-28	Q710	J-22
D202	K-28	Q711	J-22
D203	I-28	Q712	K-19
D575	F-22	Q713	H-21
D576	F-22	Q714	K-18
D801	A-17	Q715	H-18
D802	A-15	Q716	C-21
D852	A-8	Q717	I-11
D901	H-25	Q718	I-21
D902	H-24	Q719	J-19
		Q720	J-19
IC102	G-28	Q721	J-19
IC103	E-4	Q722	J-18
IC105	G-4	Q723	H-23
IC201	K-30	Q724	I-23
IC202	K-24	Q725	I-23
IC203	J-25	Q727	F-12
IC204	J-26	Q728	H-11
IC205	J-28	Q734	H-22
IC207	I-29	Q801	B-15
IC575	F-22	Q802	A-17
IC576	E-22	Q803	B-19
IC577	G-23	Q804	B-13
IC578	G-23	Q805	B-14
IC701	G-13	Q806	B-15
IC702	H-19	Q807	B-14
IC703	H-18	Q851	A-7
IC704	F-19	Q852	A-7
IC705	I-21	Q853	B-8
IC706	G-21	Q854	A-25
IC707	G-17	Q855	A-8
IC708	H-17	Q856	A-24
IC709	I-18	Q858	B-7
IC710	C-16	Q859	B-25
IC711	C-15	Q860	B-25
IC712	C-13	Q901	H-24
IC713	C-12	Q902	F-25
IC714	D-14	Q903	H-26
IC715	D-13	Q904	H-24
IC716	D-12	Q907	E-5
IC717	F-20	Q907	D-27
IC801	A-16	Q909	E-24
IC802	A-18	Q910	F-24
IC803	A-20	Q911	E-24
IC804	A-13	Q914	G-24
IC851	A-6	Q915	F-6
IC852	A-8	Q916	F-27
IC853	B-24	Q918	C-27
IC854	B-26	Q919	C-26
IC901	G-27	Q920	G-24
IC902	H-26		
IC903	H-7		
IC904	F-27		
IC905	G-6		
IC906	H-8		
IC907	I-6		
IC908	G-8		
Q101	F-4		
Q102	F-3		
Q103	F-3		
Q105	E-28		
Q201	J-2		
Q202	J-2		
Q203	J-31		
Q204	J-31		
Q205	K-13		
Q206	J-28		
Q207	K-28		
Q208	I-28		
Q209	J-28		
Q210	K-26		
Q211	K-6		
Q212	K-27		
Q213	K-27		
Q214	K-7		
Q215	K-27		
Q216	K-26		
Q574	D-21		
Q575	E-23		
Q576	E-23		
Q577	E-22		
Q578	F-22		
Q579	B-10		
Q580	C-10		
Q581	H-23		
Q582	H-22		
Q702	I-13		

VC-85 BOARD (COMPONENT SIDE)

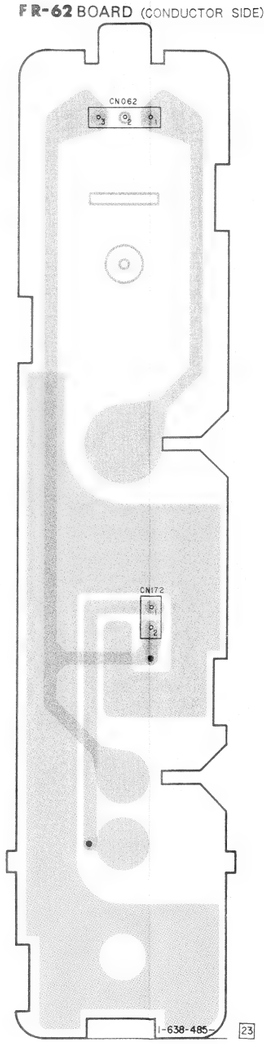


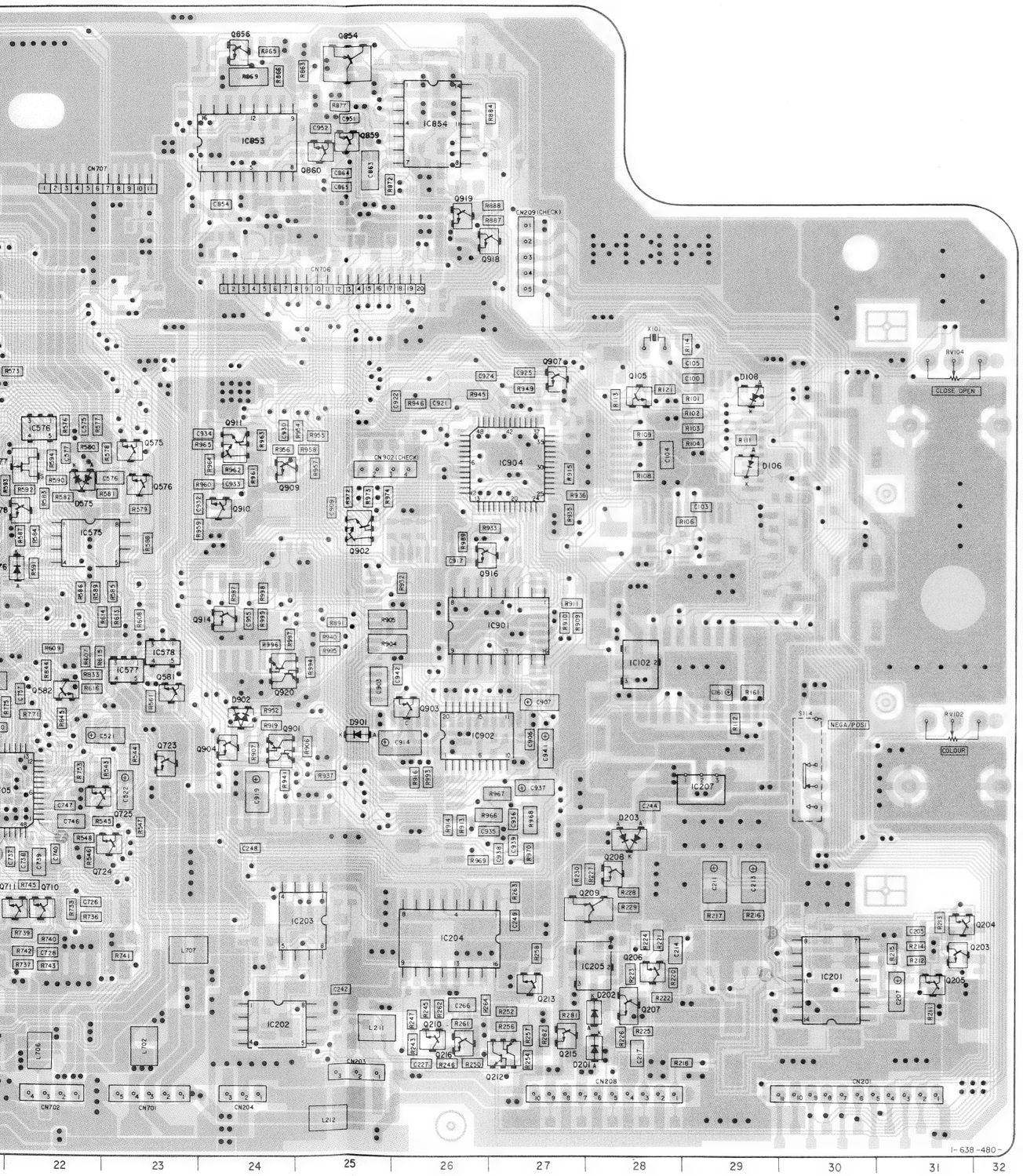
VC-85 BOARD (CONDUCTOR

VC-85 BOARD (CONDUCTOR SIDE)

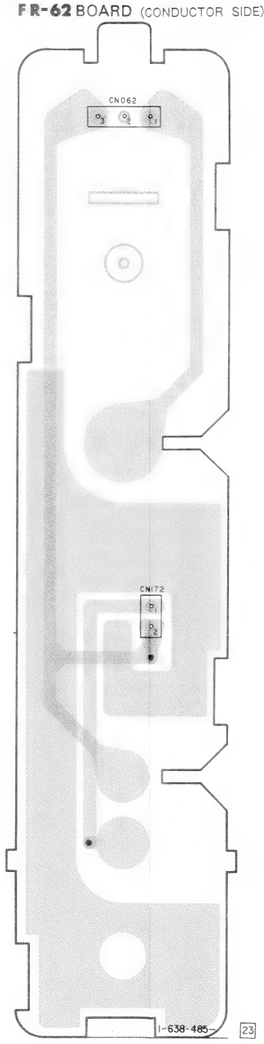


FR-62 BOARD (CONDUCTOR SIDE)





FR-62 BOARD (CONDUCTOR SIDE)



A-7062-931-A VC-85 BOARD, COMPLETE

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(Ref.No 7,000 Series)

A-7068-193-A MX-7PH BOARD, COMPLETE (HIC)

< DIODE >

D101	8-719-404-35	DIODE	MA141WK
D102	8-719-404-35	DIODE	MA141WK
D103	8-719-928-13	DIODE	SLM13DW
D104	8-719-928-13	DIODE	SLM13DW
D106	8-719-404-35	DIODE	MA141WK
D107	8-719-404-46	DIODE	MA110
D108	8-719-404-35	DIODE	MA141WK
D201	8-719-404-46	DIODE	MA110
D202	8-719-404-46	DIODE	MA110
D203	8-719-400-18	DIODE	MA152WK
D575	8-719-800-76	DIODE	1SS226
D576	8-719-404-46	DIODE	MA110
D801	8-719-820-05	DIODE	1SS181
D802	8-719-404-46	DIODE	MA110
D852	8-719-404-46	DIODE	MA110
D901	8-719-404-46	DIODE	MA110
D902	8-719-820-05	DIODE	1SS181

< IC >

IC101	8-759-152-80	IC	uPD7508BGB-522
IC102	8-759-937-56	IC	S-8054ALB-LM-S
IC103	8-759-926-28	IC	SN74HC174ANS
IC201	8-752-009-51	IC	CX20095A
IC202	8-759-504-47	IC	TL026CPS
IC203	8-759-983-69	IC	LM358PS
IC204	8-759-011-65	IC	MC74HC4053F
IC205	8-759-937-56	IC	S-8054ALB-LM-S
IC207	8-759-502-36	IC	S-81350HG
IC575	8-759-983-69	IC	LM358PS
IC576	8-759-234-77	IC	TC4S66F
IC577	8-759-234-77	IC	TC4S66F
IC578	8-759-234-77	IC	TC4S66F
IC702	8-752-034-21	IC	CXA1339R
IC703	8-759-946-00	IC	MB88341PFV
IC704	8-759-300-71	IC	TC40538F
IC705	8-752-033-34	IC	CXA1072R
IC706	8-759-946-00	IC	MB88341PFV
IC707	8-759-300-71	IC	TC40538F
IC708	8-759-300-71	IC	TC40538F
IC709	8-759-300-71	IC	TC40538F
IC710	8-759-100-93	IC	uPC393G2
IC711	8-759-300-71	IC	TC40538F
IC712	8-759-100-93	IC	uPC393G2
IC713	8-759-200-67	IC	TC4001BF
IC714	8-759-300-71	IC	TC4053BF
IC715	8-759-100-93	IC	uPC393G2
IC716	8-759-300-71	IC	TC4053BF
IC717	8-759-300-71	IC	TC4053BF
IC720	8-759-234-77	IC	TC4S66F
IC801	8-759-937-56	IC	S-8054ALB-LM-S
IC802	8-759-037-60	IC	MC68HC05N4-SC406667
IC803	8-759-983-74	IC	LM324NS
IC804	8-759-008-67	IC	MC14066BF
IC851	8-759-500-11	IC	MM1036XF
IC852	8-759-983-69	IC	LM358PS
IC853	8-759-030-35	IC	MPC1725M
IC854	8-759-983-74	IC	LM324NS
IC901	8-752-334-49	IC	CXD1172AM
IC902	8-759-946-00	IC	MB88341PFV
IC903	8-759-940-45	IC	S-8054HN-C8
IC904	8-752-326-18	IC	CXD1204R
IC905	8-759-031-86	IC	MC68HC05C4-SC411531
IC906	8-759-300-71	IC	TC4053BF
IC907	8-759-983-74	IC	LM324NS
IC908	8-759-009-06	IC	MC14052BF

< TRANSISTOR >

Q101	8-729-905-18	TRANSISTOR	DTC144EU
Q102	8-729-907-00	TRANSISTOR	DTC114EU
Q103	8-729-907-00	TRANSISTOR	DTC114EU
Q105	8-729-905-18	TRANSISTOR	DTC144EU
Q201	8-729-905-35	TRANSISTOR	2SC4081-R
Q202	8-729-905-35	TRANSISTOR	2SC4081-R
Q203	8-729-905-35	TRANSISTOR	2SC4081-R
Q204	8-729-905-35	TRANSISTOR	2SC4081-R
Q205	8-729-905-35	TRANSISTOR	2SC4081-R
Q206	8-729-905-35	TRANSISTOR	2SC4081-R
Q207	8-729-230-49	TRANSISTOR	2SC2712-YG
Q208	8-729-905-35	TRANSISTOR	2SC4081-R
Q209	8-729-106-60	TRANSISTOR	2SB1115A
Q210	8-729-905-35	TRANSISTOR	2SC4081-R
Q211	8-729-905-23	TRANSISTOR	2SA1576-R
Q212	8-729-402-84	TRANSISTOR	XN4601
Q213	8-729-905-35	TRANSISTOR	2SC4081-R
Q214	8-729-905-23	TRANSISTOR	2SA1576-R
Q215	8-729-905-35	TRANSISTOR	2SC4081-R
Q216	8-729-905-35	TRANSISTOR	2SC4081-R
Q574	8-729-905-35	TRANSISTOR	2SC4081-R
Q575	8-729-905-35	TRANSISTOR	2SC4081-R
Q576	8-729-905-35	TRANSISTOR	2SC4081-R
Q577	8-765-420-02	TRANSISTOR	2SK300-3
Q578	8-729-905-18	TRANSISTOR	DTC144EU
Q579	8-729-905-35	TRANSISTOR	2SC4081-R
Q580	8-729-402-84	TRANSISTOR	XN4601
Q581	8-729-905-18	TRANSISTOR	DTC144EU
Q582	8-729-905-35	TRANSISTOR	2SC4081-R
Q702	8-729-905-23	TRANSISTOR	2SA1576-R
Q703	8-729-905-35	TRANSISTOR	2SC4081-R
Q704	8-729-905-35	TRANSISTOR	2SC4081-R
Q705	8-729-905-35	TRANSISTOR	2SC4081-R
Q706	8-729-402-78	TRANSISTOR	XN6401
Q707	8-729-905-35	TRANSISTOR	2SC4081-R
Q708	8-729-403-10	TRANSISTOR	XN6215
Q709	8-729-905-35	TRANSISTOR	2SC4081-R
Q710	8-729-905-35	TRANSISTOR	2SC4081-R
Q711	8-729-905-35	TRANSISTOR	2SC4081-R
Q712	8-729-402-84	TRANSISTOR	XN4601
Q713	8-729-402-81	TRANSISTOR	XN4501
Q714	8-729-402-84	TRANSISTOR	XN4601
Q715	8-729-905-35	TRANSISTOR	2SC4081-R
Q716	8-729-905-18	TRANSISTOR	DTC144EU
Q717	8-729-905-23	TRANSISTOR	2SA1576-R
Q718	8-729-905-35	TRANSISTOR	2SC4081-R
Q719	8-729-905-35	TRANSISTOR	2SC4081-R
Q720	8-729-905-23	TRANSISTOR	2SA1576-R
Q721	8-729-905-35	TRANSISTOR	2SC4081-R
Q722	8-729-905-23	TRANSISTOR	2SA1576-R
Q723	8-729-905-35	TRANSISTOR	2SC4081-R
Q724	8-729-905-35	TRANSISTOR	2SC4081-R
Q727	8-729-905-23	TRANSISTOR	2SA1576-R
Q728	8-729-905-18	TRANSISTOR	DTC144EU
Q801	8-729-403-10	TRANSISTOR	XN6215
Q802	8-729-403-07	TRANSISTOR	XN1213
Q803	8-729-905-35	TRANSISTOR	2SC4081-R
Q804	8-729-805-42	TRANSISTOR	2SC3859
Q805	8-729-805-42	TRANSISTOR	2SC3859
Q806	8-729-805-42	TRANSISTOR	2SC3859
Q807	8-729-402-78	TRANSISTOR	XN6401
Q851	8-729-403-07	TRANSISTOR	XN1213
Q852	8-729-905-23	TRANSISTOR	2SA1576-R
Q853	8-729-402-84	TRANSISTOR	XN4601
Q854	8-729-106-60	TRANSISTOR	2SB1115A
Q855	8-729-905-35	TRANSISTOR	2SC4081-R
Q856	8-729-905-15	TRANSISTOR	DTC144WU
Q858	8-729-402-84	TRANSISTOR	XN4601
Q859	8-729-905-18	TRANSISTOR	DTC144EU
Q860	8-729-905-18	TRANSISTOR	DTC144EU
Q901	8-729-402-84	TRANSISTOR	XN4601
Q902	8-729-403-10	TRANSISTOR	XN6215
Q903	8-729-905-23	TRANSISTOR	2SA1576-R
Q904	8-729-905-18	TRANSISTOR	DTC144EU
Q906	8-729-905-35	TRANSISTOR	2SC4081-R
Q907	8-729-905-35	TRANSISTOR	2SC4081-R
Q909	8-729-905-35	TRANSISTOR	2SC4081-R
Q910	8-729-905-35	TRANSISTOR	2SC4081-R
Q911	8-729-402-19	TRANSISTOR	XN6501
Q914	8-729-905-18	TRANSISTOR	DTC144EU
Q915	8-729-905-18	TRANSISTOR	DTC144EU
Q916	8-729-905-18	TRANSISTOR	DTC144EU
Q918	8-729-905-18	TRANSISTOR	DTC144EU
Q919	8-729-905-18	TRANSISTOR	DTC144EU
Q920	8-729-402-84	TRANSISTOR	XN4601

* A-7062-931-A VC-85 BOARD, COMPLETE
****
(Ref. No 7,000 Series)

A-7068-193-A MX-7PH BOARD, COMPLETE (HIC)

< DIODE >

D101	8-719-404-35	DIODE	MA141WK
D102	8-719-404-35	DIODE	MA141WK
D103	8-719-928-13	DIODE	SLM13DW
D104	8-719-928-13	DIODE	SLM13DW
D106	8-719-404-35	DIODE	MA141WK
D107	8-719-404-46	DIODE	MA110
D108	8-719-404-35	DIODE	MA141WK
D201	8-719-404-46	DIODE	MA110
D202	8-719-404-46	DIODE	MA110
D203	8-719-400-18	DIODE	MA152WK
D575	8-719-800-76	DIODE	1SS226
D576	8-719-404-46	DIODE	MA110
D801	8-719-820-05	DIODE	1SS181
D802	8-719-404-46	DIODE	MA110
D852	8-719-404-46	DIODE	MA110
D901	8-719-404-46	DIODE	MA110
D902	8-719-820-05	DIODE	1SS181

< IC >

IC101	8-759-152-80	IC	uPD7508BGB-522
IC102	8-759-937-56	IC	S-8054ALB-LM-S
IC103	8-759-926-28	IC	SN74HC174ANS
IC201	8-752-009-51	IC	CX20095A
IC202	8-759-504-47	IC	TL026CPS
IC203	8-759-983-69	IC	LM358PS
IC204	8-759-011-65	IC	MC74HC4053F
IC205	8-759-937-56	IC	S-8054ALB-LM-S
IC207	8-759-502-36	IC	S-81350HG
IC575	8-759-983-69	IC	LM358PS
IC576	8-759-234-77	IC	TC4S66F
IC577	8-759-234-77	IC	TC4S66F
IC578	8-759-234-77	IC	TC4S66F
IC702	8-752-034-21	IC	CXA1339R
IC703	8-759-946-00	IC	MB88341PFV
IC704	8-759-300-71	IC	TC4053BF
IC705	8-752-033-34	IC	CXA1072R
IC706	8-759-946-00	IC	MB88341PFV
IC707	8-759-300-71	IC	TC4053BF
IC708	8-759-300-71	IC	TC4053BF
IC709	8-759-300-71	IC	TC4053BF
IC710	8-759-100-93	IC	uPC393G2
IC711	8-759-300-71	IC	TC4053BF
IC712	8-759-100-93	IC	uPC393G2
IC713	8-759-200-67	IC	TC4001BF
IC714	8-759-300-71	IC	TC4053BF
IC715	8-759-100-93	IC	uPC393G2
IC716	8-759-300-71	IC	TC4053BF
IC717	8-759-300-71	IC	TC4053BF
IC720	8-759-234-77	IC	TC4S66F
IC801	8-759-937-56	IC	S-8054ALB-LM-S
IC802	8-759-037-60	IC	MC68HC05N4-SC406667
IC803	8-759-983-74	IC	LM324NS
IC804	8-759-008-67	IC	MC14066BF
IC851	8-759-500-11	IC	MM1036XF
IC852	8-759-983-69	IC	LM358PS
IC853	8-759-030-35	IC	MPC1725M
IC854	8-759-983-74	IC	LM324NS
IC901	8-752-334-49	IC	CXD1172AM
IC902	8-759-946-00	IC	MB88341PFV
IC903	8-759-940-45	IC	S-8054HN-C8
IC904	8-752-326-18	IC	CXD1204R
IC905	8-759-031-86	IC	MC68HC05C4-SC411531
IC906	8-759-300-71	IC	TC4053BF
IC907	8-759-983-74	IC	LM324NS
IC908	8-759-009-06	IC	MC14052BF

< TRANSISTOR >

Q101	8-729-905-18	TRANSISTOR	DTC144EU
Q102	8-729-907-00	TRANSISTOR	DTC114EU
Q103	8-729-907-00	TRANSISTOR	DTC114EU
Q105	8-729-905-18	TRANSISTOR	DTC144EU
Q201	8-729-905-35	TRANSISTOR	2SC4081-R
Q202	8-729-905-35	TRANSISTOR	2SC4081-R
Q203	8-729-905-35	TRANSISTOR	2SC4081-R
Q204	8-729-905-35	TRANSISTOR	2SC4081-R
Q205	8-729-905-35	TRANSISTOR	2SC4081-R
Q206	8-729-905-35	TRANSISTOR	2SC4081-R
Q207	8-729-230-49	TRANSISTOR	2SC2712-YG
Q208	8-729-905-35	TRANSISTOR	2SC4081-R
Q209	8-729-106-60	TRANSISTOR	2SB1115A
Q210	8-729-905-35	TRANSISTOR	2SC4081-R
Q211	8-729-905-23	TRANSISTOR	2SA1576-R
Q212	8-729-402-84	TRANSISTOR	XN4601
Q213	8-729-905-35	TRANSISTOR	2SC4081-R
Q214	8-729-905-23	TRANSISTOR	2SA1576-R
Q215	8-729-905-35	TRANSISTOR	2SC4081-R
Q216	8-729-905-35	TRANSISTOR	2SC4081-R
Q574	8-729-905-35	TRANSISTOR	2SC4081-R
Q575	8-729-905-35	TRANSISTOR	2SC4081-R
Q576	8-729-905-35	TRANSISTOR	2SC4081-R
Q577	8-765-420-02	TRANSISTOR	2SK300-3
Q578	8-729-905-18	TRANSISTOR	DTC144EU
Q579	8-729-905-35	TRANSISTOR	2SC4081-R
Q580	8-729-402-84	TRANSISTOR	XN4601
Q581	8-729-905-18	TRANSISTOR	DTC144EU
Q582	8-729-905-35	TRANSISTOR	2SC4081-R
Q702	8-729-905-23	TRANSISTOR	2SA1576-R
Q703	8-729-905-35	TRANSISTOR	2SC4081-R
Q704	8-729-905-35	TRANSISTOR	2SC4081-R
Q705	8-729-905-35	TRANSISTOR	2SC4081-R
Q706	8-729-402-78	TRANSISTOR	XN6401
Q707	8-729-905-35	TRANSISTOR	2SC4081-R
Q708	8-729-403-10	TRANSISTOR	XN6215
Q709	8-729-905-35	TRANSISTOR	2SC4081-R
Q710	8-729-905-35	TRANSISTOR	2SC4081-R
Q711	8-729-905-35	TRANSISTOR	2SC4081-R
Q712	8-729-402-84	TRANSISTOR	XN4601
Q713	8-729-402-81	TRANSISTOR	XN4501
Q714	8-729-402-84	TRANSISTOR	XN4601
Q715	8-729-905-35	TRANSISTOR	2SC4081-R
Q716	8-729-905-18	TRANSISTOR	DTC144EU
Q717	8-729-905-23	TRANSISTOR	2SA1576-R
Q718	8-729-905-35	TRANSISTOR	2SC4081-R
Q719	8-729-905-35	TRANSISTOR	2SC4081-R
Q720	8-729-905-23	TRANSISTOR	2SA1576-R
Q721	8-729-905-35	TRANSISTOR	2SC4081-R
Q722	8-729-905-23	TRANSISTOR	2SA1576-R
Q723	8-729-905-35	TRANSISTOR	2SC4081-R
Q724	8-729-905-35	TRANSISTOR	2SC4081-R
Q727	8-729-905-23	TRANSISTOR	2SA1576-R
Q728	8-729-905-18	TRANSISTOR	DTC144EU
Q801	8-729-403-10	TRANSISTOR	XN6215
Q802	8-729-403-07	TRANSISTOR	XN1213
Q803	8-729-905-35	TRANSISTOR	2SC4081-R
Q804	8-729-805-42	TRANSISTOR	2SC3859
Q805	8-729-805-42	TRANSISTOR	2SC3859
Q806	8-729-805-42	TRANSISTOR	2SC3859
Q807	8-729-402-78	TRANSISTOR	XN6401
Q851	8-729-403-07	TRANSISTOR	XN1213
Q852	8-729-905-23	TRANSISTOR	2SA1576-R
Q853	8-729-402-84	TRANSISTOR	XN4601
Q854	8-729-106-60	TRANSISTOR	2SB1115A
Q855	8-729-905-35	TRANSISTOR	2SC4081-R
Q856	8-729-905-15	TRANSISTOR	DTC144WU
Q858	8-729-402-84	TRANSISTOR	XN4601
Q859	8-729-905-18	TRANSISTOR	DTC144EU
Q860	8-729-905-18	TRANSISTOR	DTC144EU
Q901	8-729-402-84	TRANSISTOR	XN4601
Q902	8-729-403-10	TRANSISTOR	XN6215
Q903	8-729-905-23	TRANSISTOR	2SA1576-R
Q904	8-729-905-18	TRANSISTOR	DTC144EU
Q906	8-729-905-35	TRANSISTOR	2SC4081-R
Q907	8-729-905-35	TRANSISTOR	2SC4081-R
Q909	8-729-905-35	TRANSISTOR	2SC4081-R
Q910	8-729-905-35	TRANSISTOR	2SC4081-R
Q911	8-729-402-19	TRANSISTOR	XN6501
Q914	8-729-905-18	TRANSISTOR	DTC144EU
Q915	8-729-905-18	TRANSISTOR	DTC144EU
Q916	8-729-905-18	TRANSISTOR	DTC144EU
Q918	8-729-905-18	TRANSISTOR	DTC144EU
Q919	8-729-905-18	TRANSISTOR	DTC144EU
Q920	8-729-402-84	TRANSISTOR	XN4601

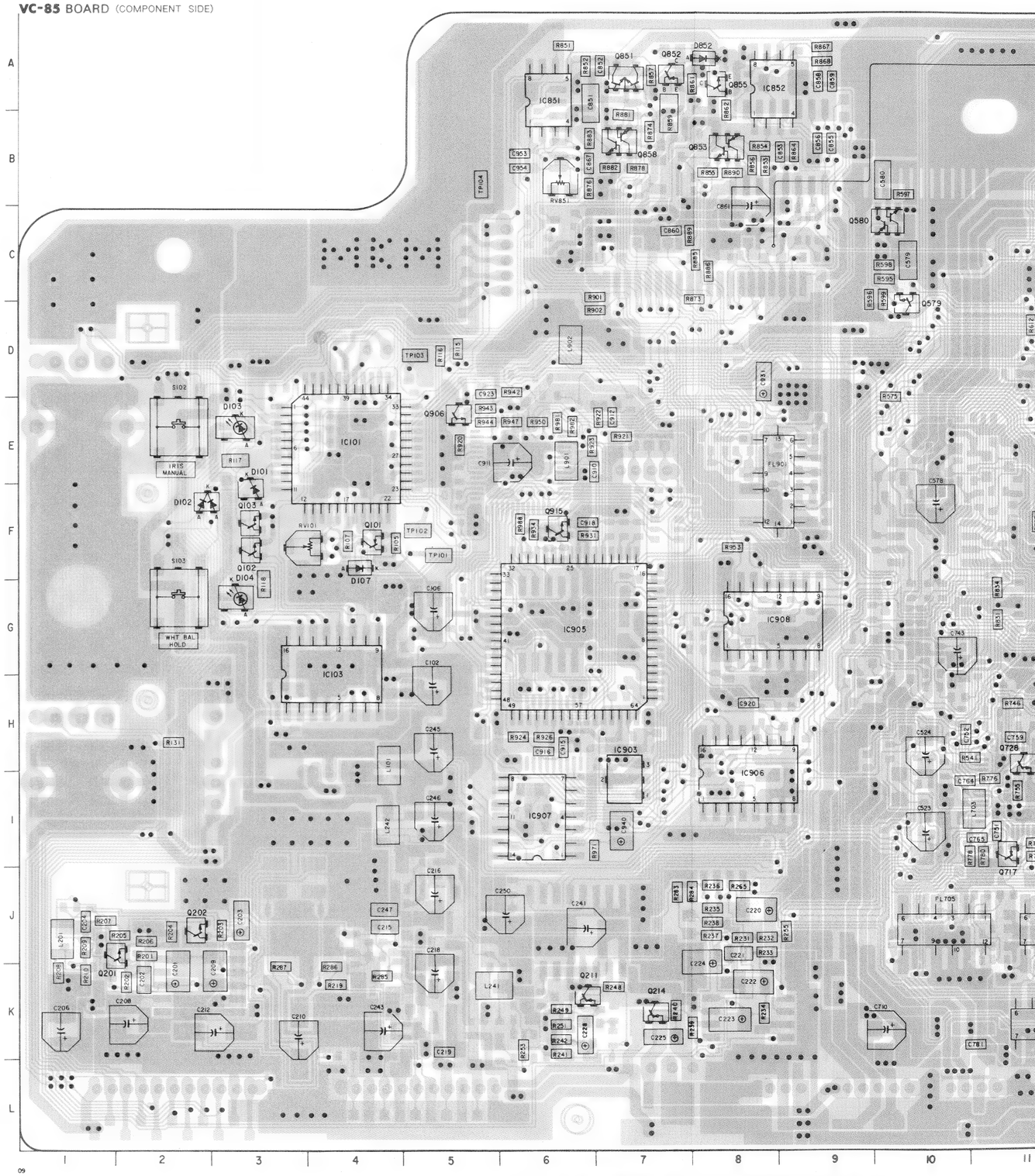
VC-85 (CAMERA PROCESS, SYSTEM CONTROL), FR-62 (FLUORESCENT DISPLAY) PRINTED WIRING BOARDS

— Ref. No. FR-62 BOARD: 3000 series, VC-85 BOARD: 7000 series —

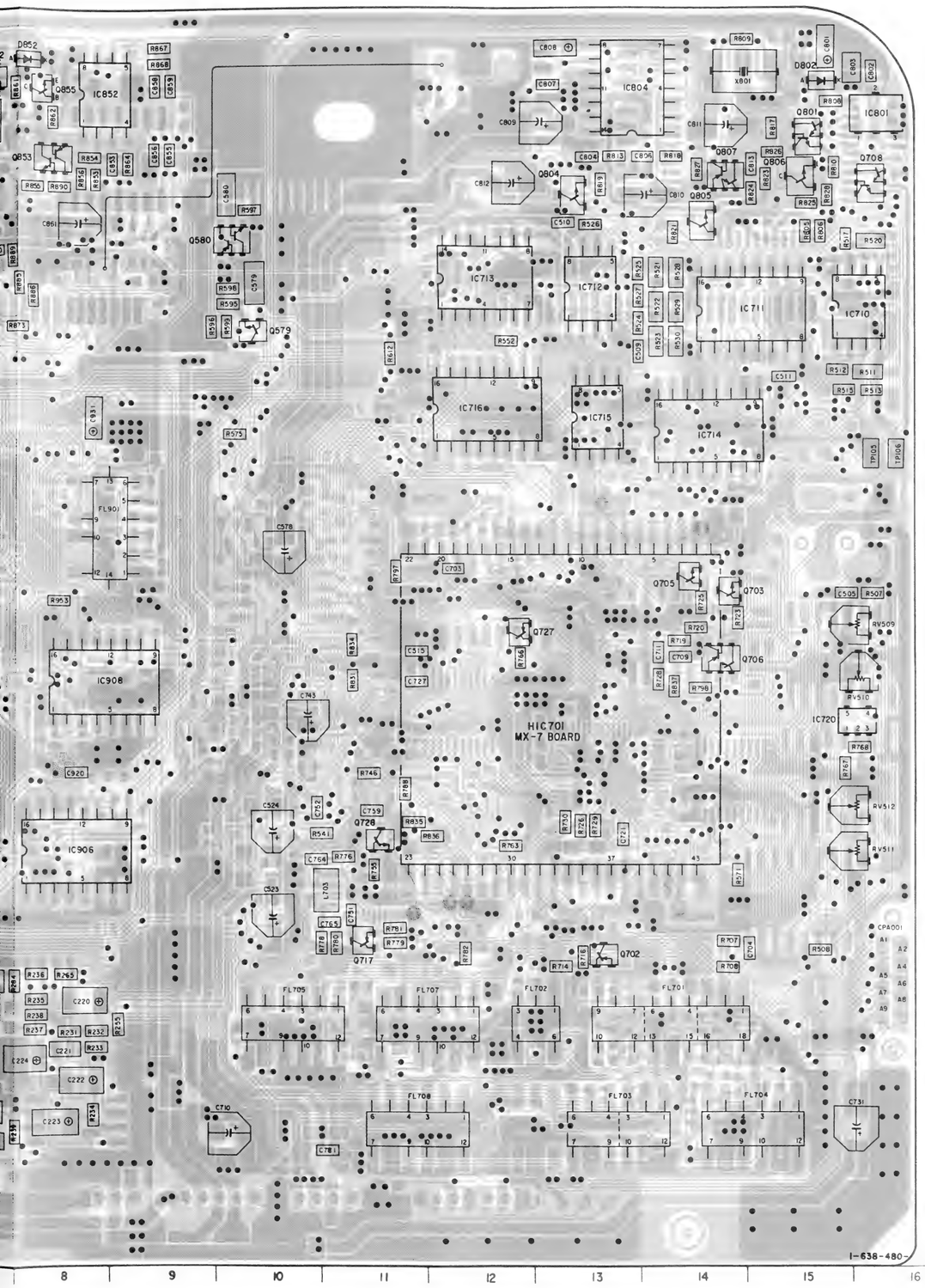
VC-85 BOARD

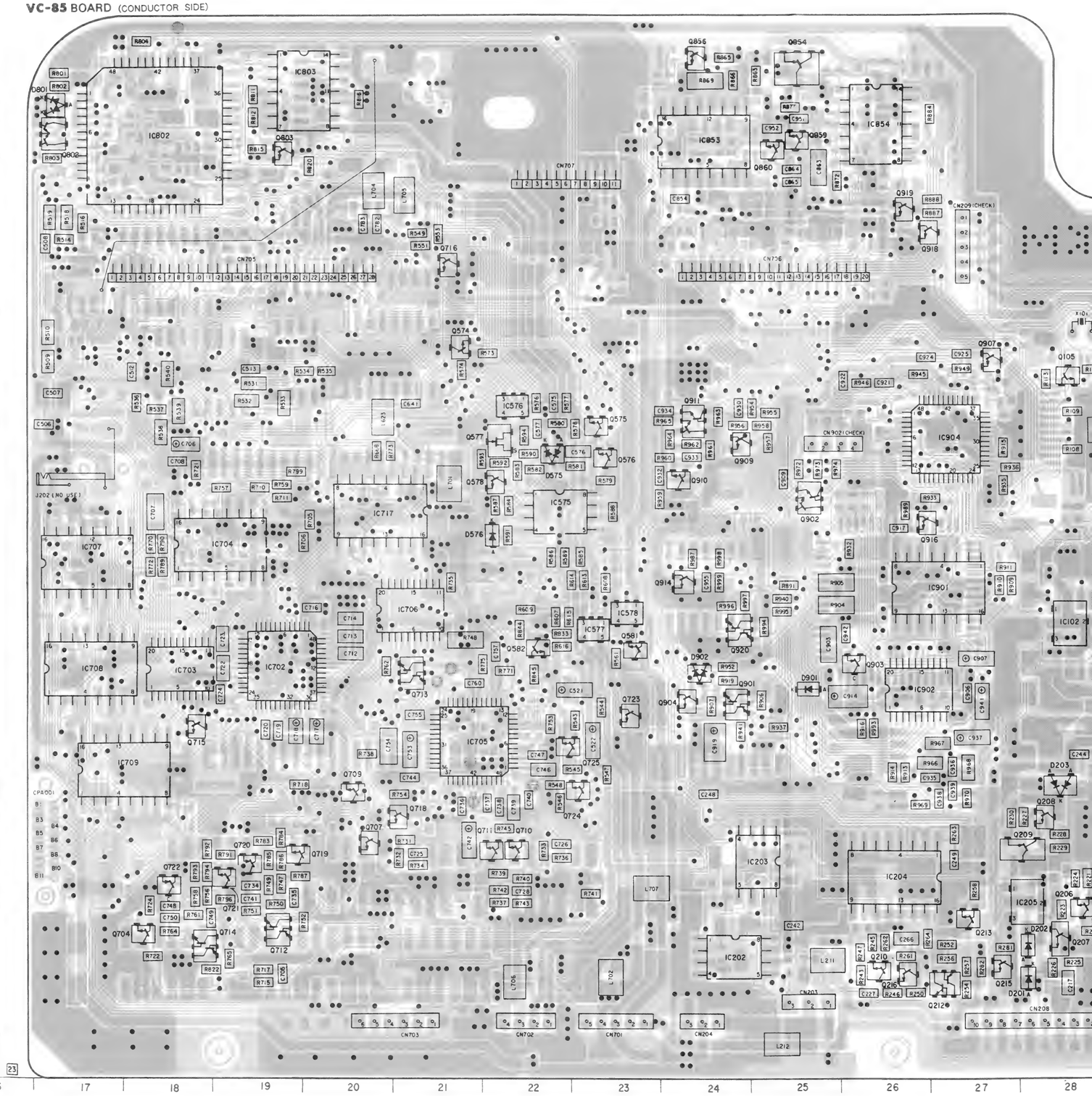
D101	E-3	Q703	F-14	IC802	A-18
D102	F-2	Q704	K-18	IC803	A-20
D103	E-3	Q705	F-14	IC804	A-13
D104	G-3	Q706	G-14	IC851	A-6
D106	E-29	Q707	J-20	IC852	A-8
D107	F-4	Q708	B-16	IC853	B-24
D108	E-29	Q709	I-20	IC854	B-26
D201	K-28	Q710	J-22	IC901	G-27
D202	K-28	Q711	J-22	IC902	H-26
D203	I-28	Q712	K-19	IC903	H-7
D575	F-22	Q713	H-21	IC904	F-27
D576	F-22	Q714	K-18	IC905	G-6
D801	A-17	Q715	H-18	IC906	H-8
D802	A-15	Q716	C-21	IC907	I-6
D852	A-8	Q717	I-11	IC908	G-8
D901	H-25	Q718	I-21		
D902	H-24	Q719	J-19	Q101	F-4
		Q720	J-19	Q102	F-3
IC102	G-28	Q721	J-19	Q103	F-3
IC103	E-4	Q722	J-18	Q105	E-28
IC105	G-4	Q723	H-23	Q201	J-2
IC201	K-30	Q724	I-23	Q202	J-2
IC202	K-24	Q725	I-23	Q203	J-31
IC203	J-25	Q727	F-12	Q204	J-31
IC204	J-26	Q728	H-11	Q205	K-13
IC205	J-28	Q734	H-22	Q206	J-28
IC207	I-29	Q801	B-15	Q207	K-28
IC575	F-22	Q802	A-17	Q208	I-28
IC576	E-22	Q803	B-19	Q209	J-28
IC577	G-23	Q804	B-13	Q210	K-26
IC578	G-23	Q805	B-14	Q211	K-6
IC701	G-13	Q806	B-15	Q212	K-27
IC702	H-19	Q807	B-14	Q213	K-27
IC703	H-18	Q851	A-7	Q214	K-7
IC704	F-19	Q852	A-7	Q215	K-27
IC705	I-21	Q853	B-8	Q216	K-26
IC706	G-21	Q854	A-25	Q574	D-21
IC707	G-17	Q855	A-8	Q575	E-23
IC708	H-17	Q856	A-24	Q576	E-23
IC709	I-18	Q858	B-7	Q577	E-22
IC710	C-16	Q859	B-25	Q578	F-22
IC711	C-15	Q860	B-25	Q579	B-10
IC712	C-13	Q901	H-24	Q580	C-10
IC713	C-12	Q902	F-25	Q581	H-23
IC714	D-14	Q903	H-26	Q582	H-22
IC715	D-13	Q904	H-24	Q702	I-13
IC716	D-12	Q906	E-5		
IC717	F-20	Q907	D-27		
IC801	A-16	Q909	E-24		
IC802	A-18	Q910	F-24		
IC803	A-20	Q911	E-24		
IC804	A-13	Q914	G-24		
IC851	A-6	Q915	F-6		
IC852	A-8	Q916	F-27		
IC853	B-24	Q918	C-27		
IC854	B-26	Q919	C-26		
IC901	G-27	Q920	G-24		

VC-85 BOARD (COMPONENT SIDE)

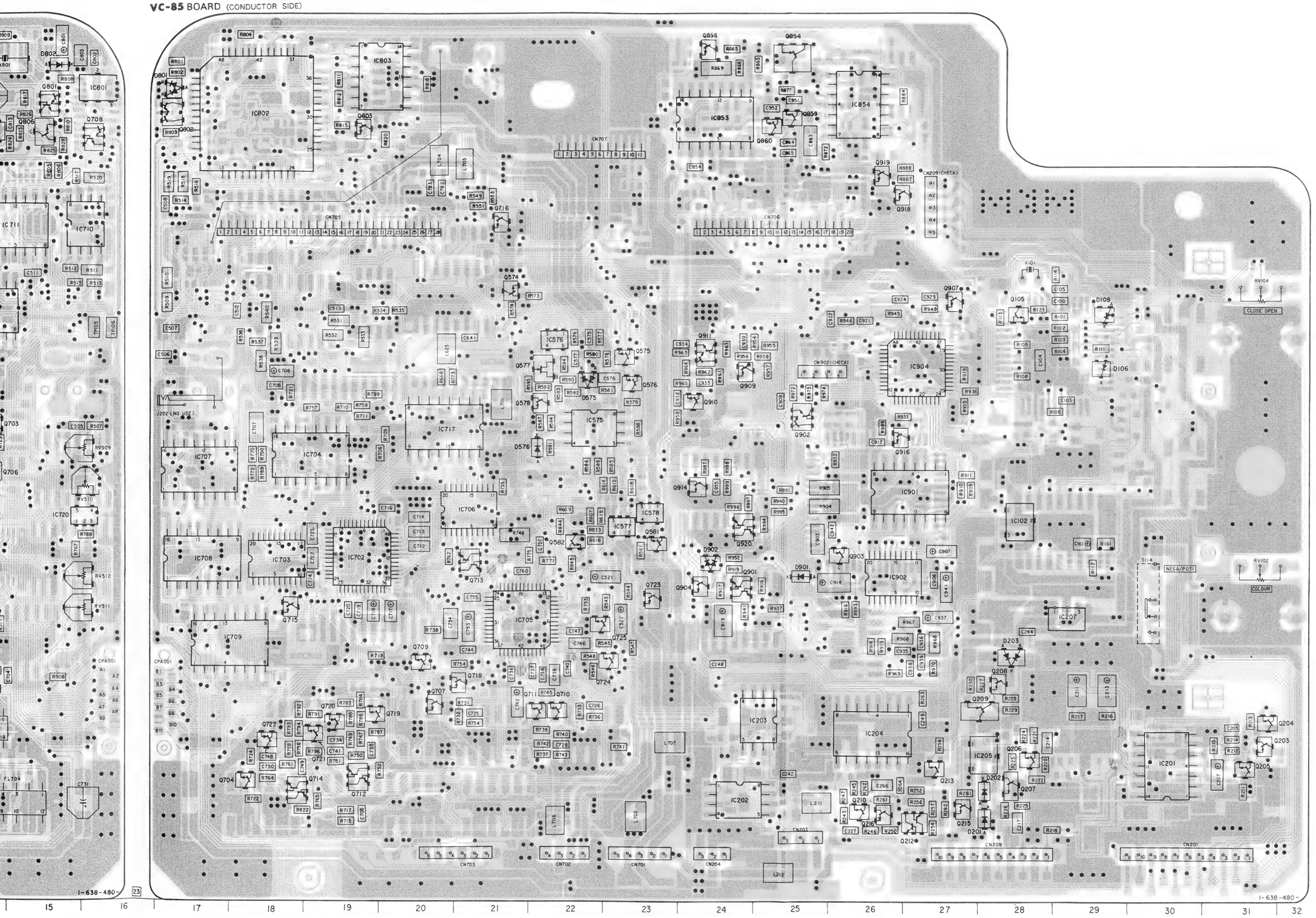


VC-85 BOARD (CONDUCTOR SIDE)

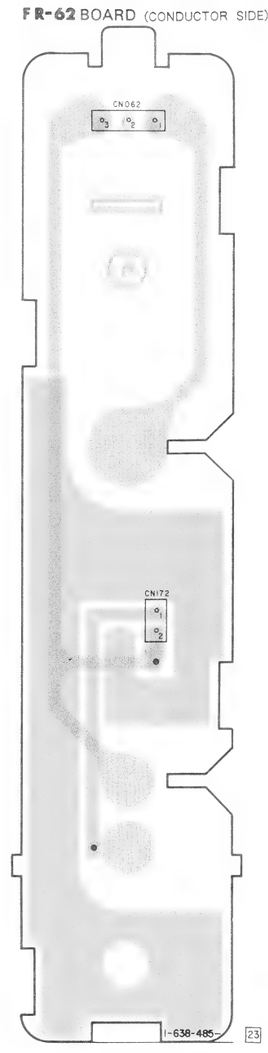




VC-85 BOARD (CONDUCTOR SIDE)



FR-62 BOARD (CONDUCTOR SIDE)



— Ref. No. VC-85 BOARD: 7000 series —

(See Page 76, 77)

TO VC-85 (2/4) BOARD

VC-85 (4/4) BOARD

EE Y7 CONT
XX CAM 5V
G GND

EA YH
AF N/P
AK EVR CS
AL IRIS MANU
AM FOCUS N
AN FOCUS F
AO ZOOM T
AP ZOOM W
AQ IRIS VR
BC BDS SI
BD BDS SCK
AG VD
BE HD
EB AF CK (4 use)
EC WND
ED AGC CONT F
EF IRIS OUT
EG AGC REF
CN AGC CONT R
CU PG CONT

IC902
EVR

IC901
A/D CONVERTER

IC901 CXD1172AM

Q902
SWITCH
XN6215

Q903 BUFFER
Q901 BUFFER

IC902 MB83341PF

Q903 2SA1576
Q901 XN4601

IC904
AF PROCESS

IC904 CXD1204R

IC905 MC68HC05C4

IC903
RESET

IC903 S-8054HN-CB

FL901

Q906 HPF 1
Q907 HPF 2
Q909 AMP
Q910 RECT
Q911 RECT

(See Page 76, 77)

TO VC-85 (2/4) BOARD

EA YH
AF Y/P
AK EVR CS
AL IRIS MANU
AM FOCUS N
AN FOCUS F
AO ZOOM T
AP ZOOM W
AQ IRIS VR
BC BUS SI
BD BUS SCK
AG VD
BE HD
EB AF CK (4fsc)
EC WND
ED AGC CONT F
EF IRIS OUT
EG AGC REF
CN AGC CONT R
CU PG CONT
EH V SUB CONT
AB REF 1V
AA REF 2V

(See Page 61)

TO VC-85 (1/4) BOARD

CF POSI BG
CE POSI RG

(See Page 76, 77)

TO VC-85 (2/4) BOARD

GA UNREG GND
BA CAM UNREG

G GND
DA DRIVE (+)
DB CONT (+)
DC CONT (-)
AA BIAS (+)
AB HALL (-)
DF HALL (+)
DG ZOOM T
DH ZOOM W
DJ FOCUS N
DJ FOCUS F
BA FOCUS ANODE
DL FOCUS N C
DM FOCUS F C

IC902 EVR

IC906 SELECTOR

IC905 AUTO FOCUS CPU

IC907 AMP

IC851 ZOOM MOTOR DRIVE

IC908 SELECTOR

Q903 BUFFER
Q901 BUFFER
Q904 INVERTER
Q920 BUFFER
Q853 BUFFER
Q852 CURRENT DETECT
Q851 CURRENT DETECT
Q858 BUFFER
Q915 SWITCH
Q916 SWITCH
Q918 SWITCH
Q919 SWITCH
Q860 SWITCH
Q859 SWITCH
Q856 INVERTER
Q853 BUFFER
Q854, 855 FOCUS REG

16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27

(See Page 76, 77)

MC-65 (MIC AMPLIFIER), FA-1 (FUNCTION SWITCH), PJ-43 (OUTPUT CONNECTOR), JS-22 (COLOR CORRECT CONTROL) PRINTED WIRING BOARDS

— Ref. No. FA-1 BOARD: 2000 series, JS-22 BOARD: 5000 series, PJ-43 BOARD: 6000 series, MC-65 BOARD: 8000 series —

```
* A-7062-932-A MC-65  BOARD, COMPLETE
               **********************
                          (Ref. No 8,000 Series)

                      < DIODE >

D005     8-719-420-15 DIODE   MA8082-M
D006     8-719-420-15 DIODE   MA8082-M
D261     8-719-404-46 DIODE   MA110
D262     8-719-404-46 DIODE   MA110

                      < IC >

IC206    8-759-981-58 IC RC2043M-D

                   < TRANSISTOR >

Q261     8-729-905-35 TRANSISTOR   2SC4081-R
Q262     8-729-905-12 TRANSISTOR   DTA144EU
Q263     8-729-920-XX TRANSISTOR   DTA114EU
Q264     8-729-905-18 TRANSISTOR   DTC144EU
```

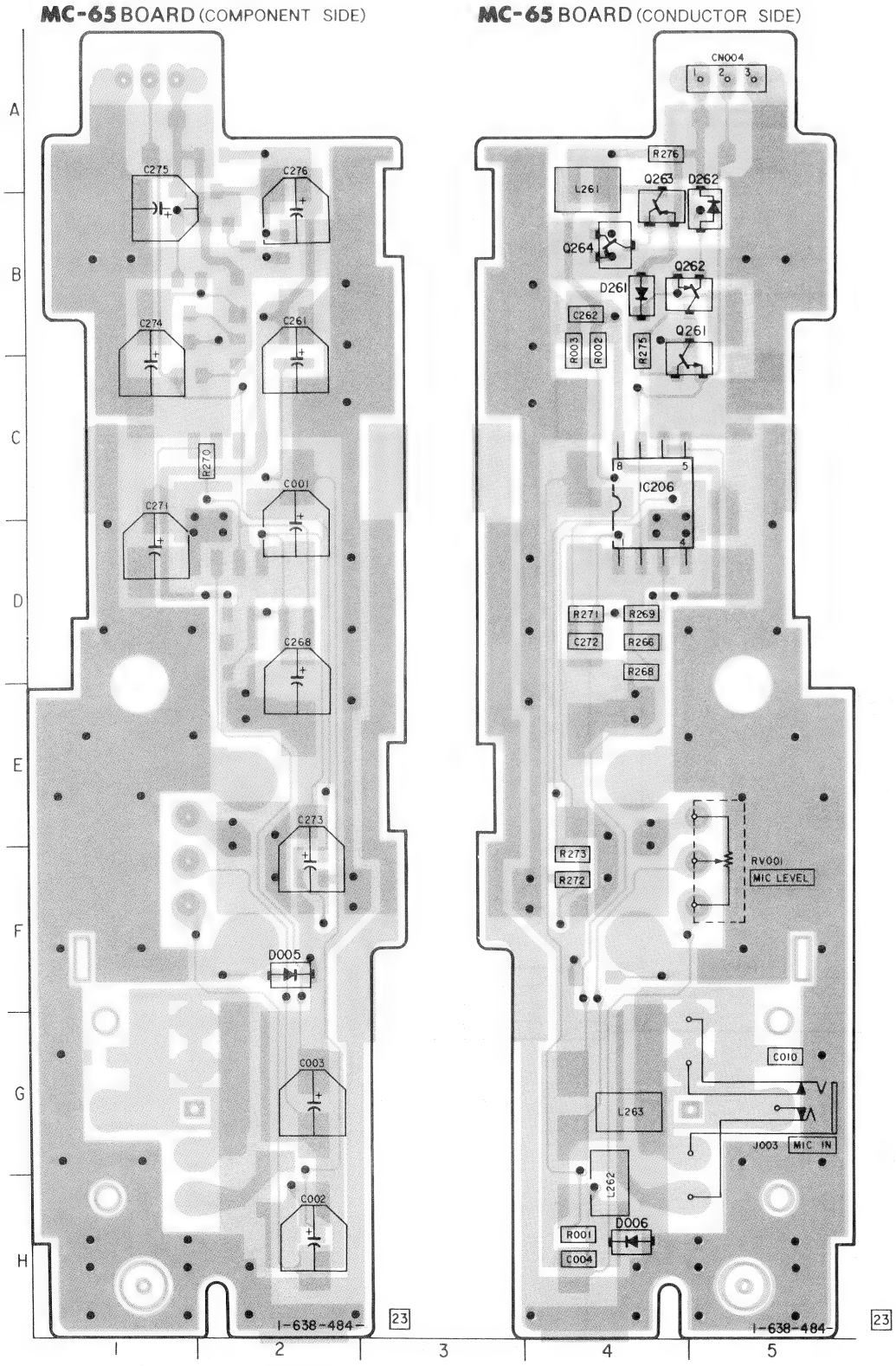
MC-65 BOARD

D005 F-2
D006 H-4
D261 B-4
D262 B-5

IC206 C-4

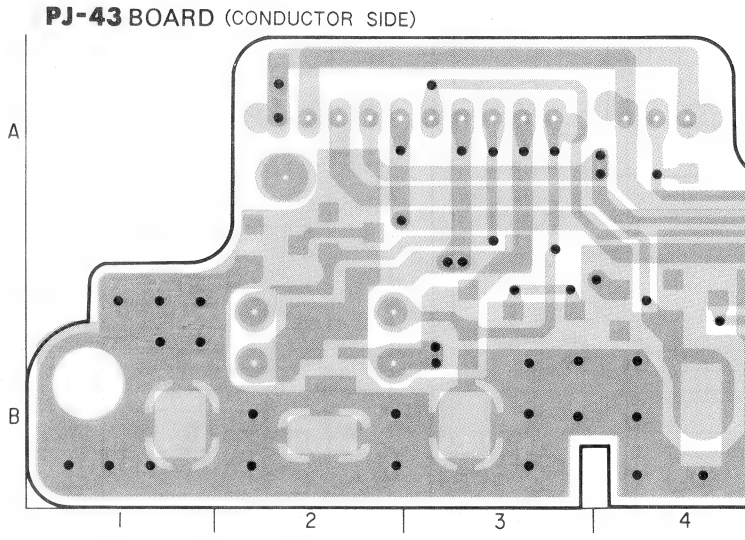
Q261 B-5
Q262 B-5
Q263 B-4
Q264 B-4

MC-65 BOARD (COMPONENT SIDE)

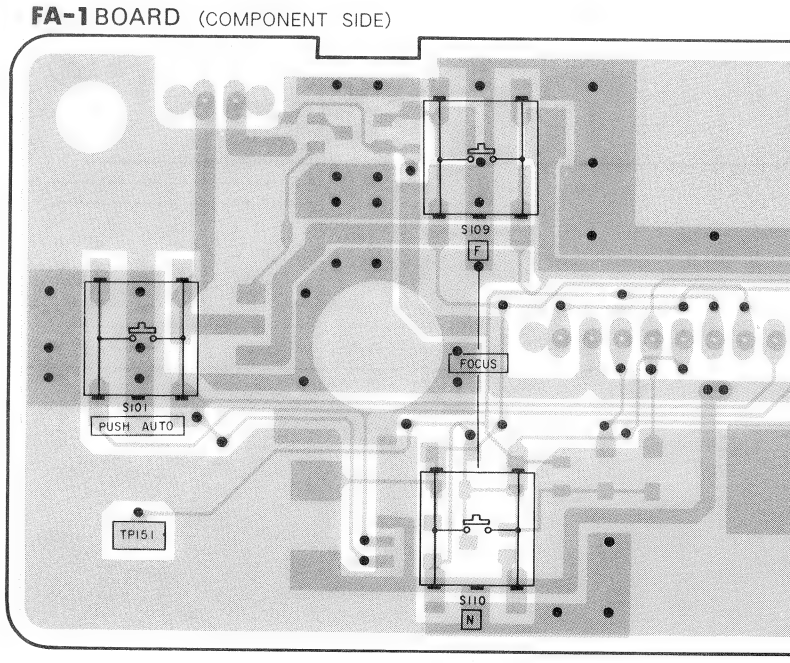


MC-65 BOARD (CONDUCTOR SIDE)

PJ-43 BOARD (CONDUCTOR SIDE)



FA-1 BOARD (COMPONENT SIDE)

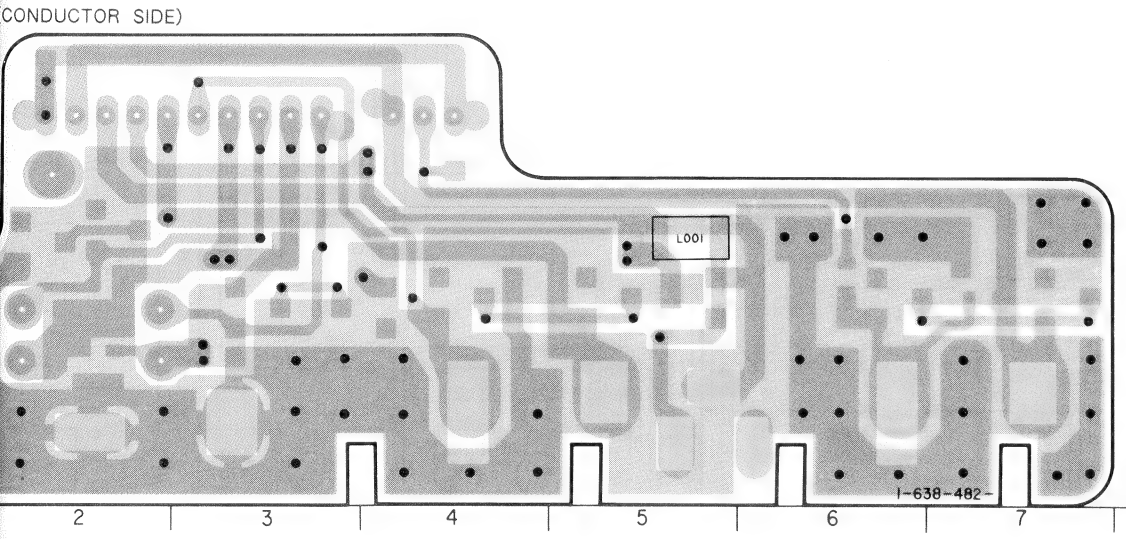


* A-7062-935-A PJ-43 BOARD, COMPLETE
****
(Ref. No 6,000 Series)

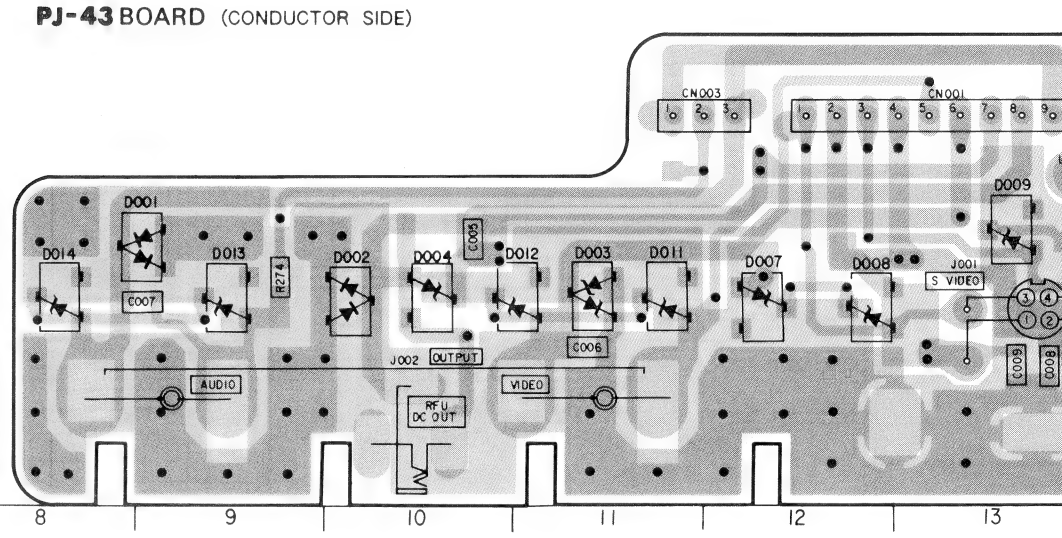
< DIODE >

D001	8-719-800-76	DIODE	1SS226
D002	8-719-800-76	DIODE	1SS226
D003	8-719-800-76	DIODE	1SS226
D004	8-719-106-43	DIODE	RD9.1M-B1
D007	8-719-106-43	DIODE	RD9.1M-B1
D008	8-719-106-43	DIODE	RD9.1M-B1
D009	8-719-106-43	DIODE	RD9.1M-B1
D010	8-719-106-43	DIODE	RD9.1M-B1
D011	8-719-106-43	DIODE	RD9.1M-B1
D012	8-719-106-43	DIODE	RD9.1M-B1
D013	8-719-106-43	DIODE	RD9.1M-B1
D014	8-719-106-43	DIODE	RD9.1M-B1

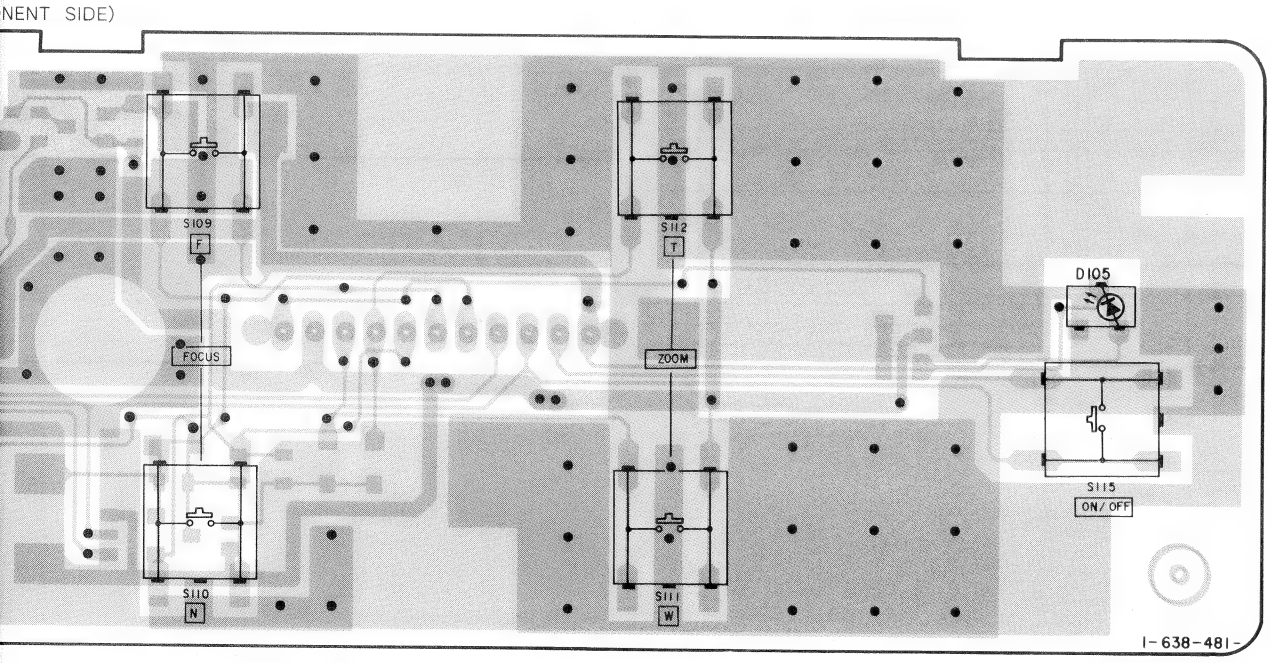
(CONDUCTOR SIDE)



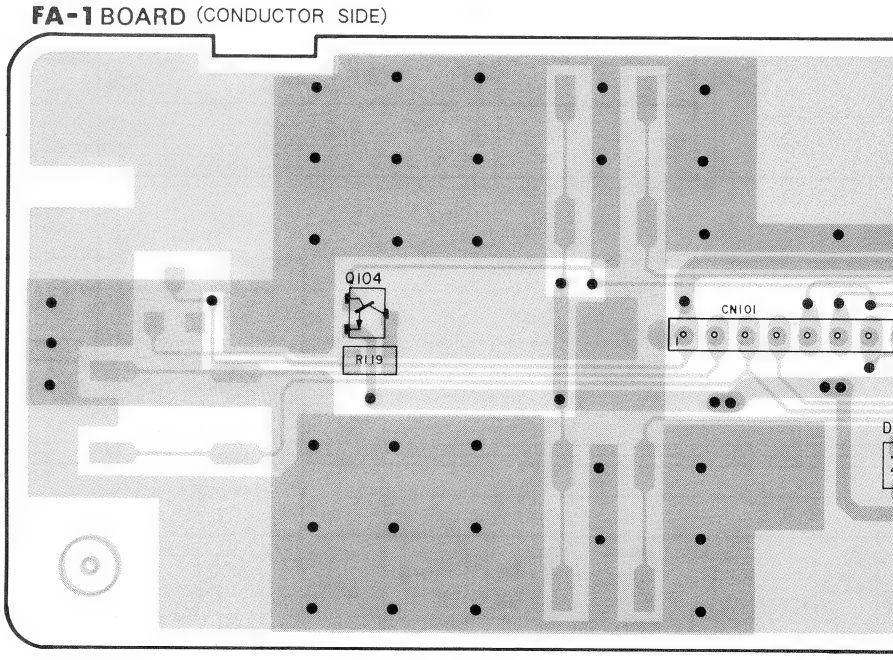
PJ-43 BOARD (CONDUCTOR SIDE)



NENT SIDE)



FA-1 BOARD (CONDUCTOR SIDE)

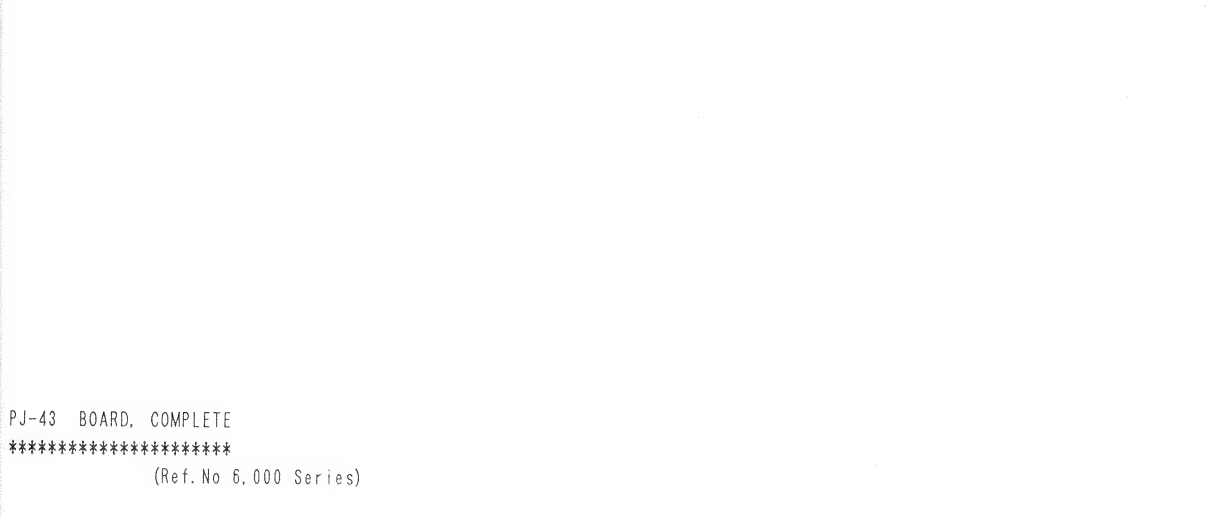


PJ-43 BOARD, COMPLETE
****
(Ref. No 6,000 Series)

< DIODE >

-800-76 DIODE 1SS226
-800-76 DIODE 1SS226
-800-76 DIODE 1SS226
-106-43 DIODE RD9.1M-B1
-106-43 DIODE RD9.1M-B1
-106-43 DIODE RD9.1M-B1
-106-43 DIODE RD9.1M-B1
-106-43 DIODE RD9.1M-B1
-106-43 DIODE RD9.1M-B1
-106-43 DIODE RD9.1M-B1

ARD (CONDUCTOR SIDE)

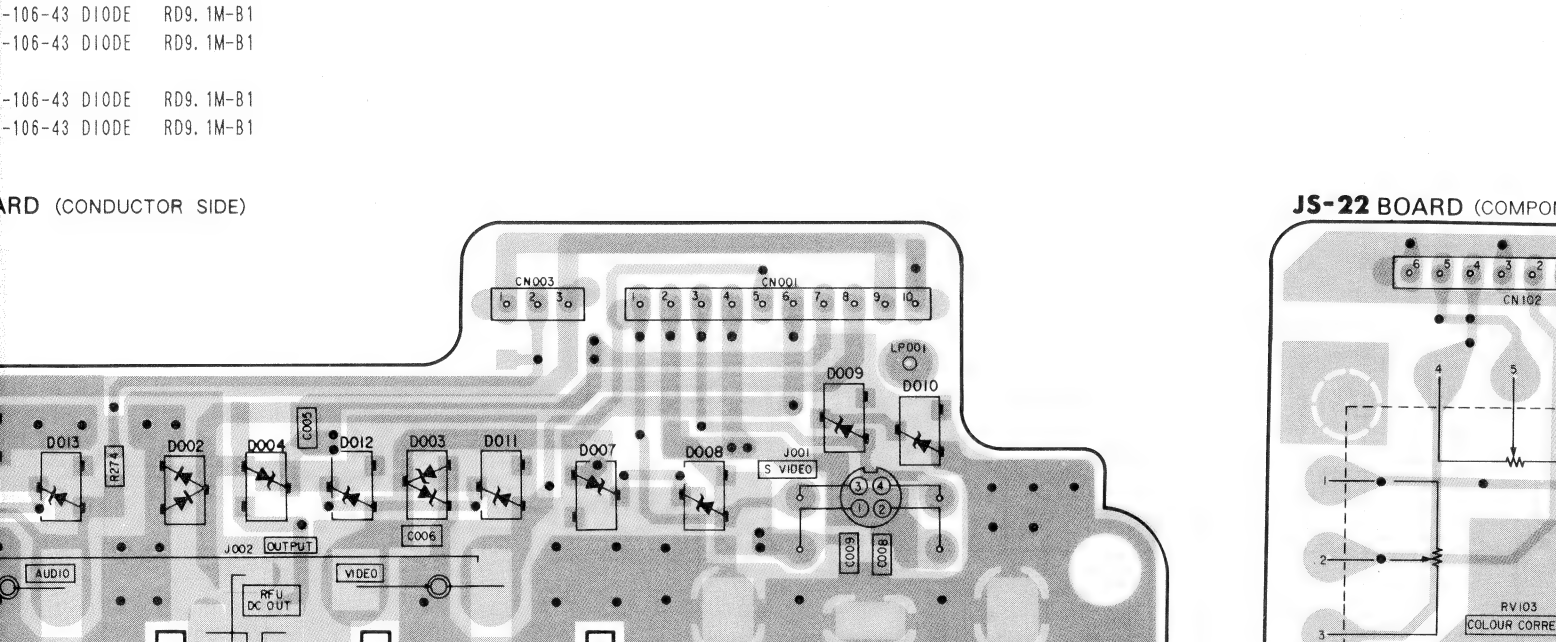


23

JS-22 BOARD (COMPONENT SIDE)

23

FA-1 BOARD (CONDUCTOR SIDE)



23

* A-7062-933-A FA-1 BOARD, COMPLETE
****
(Ref. No 2,000 Series)

< DIODE >

D105	8-719-928-13	DIODE	SLM13DW
D151	8-719-404-46	DIODE	MA110
D152	8-719-404-46	DIODE	MA110
D153	8-719-404-46	DIODE	MA110
D171	8-719-404-46	DIODE	MA110

< IC >

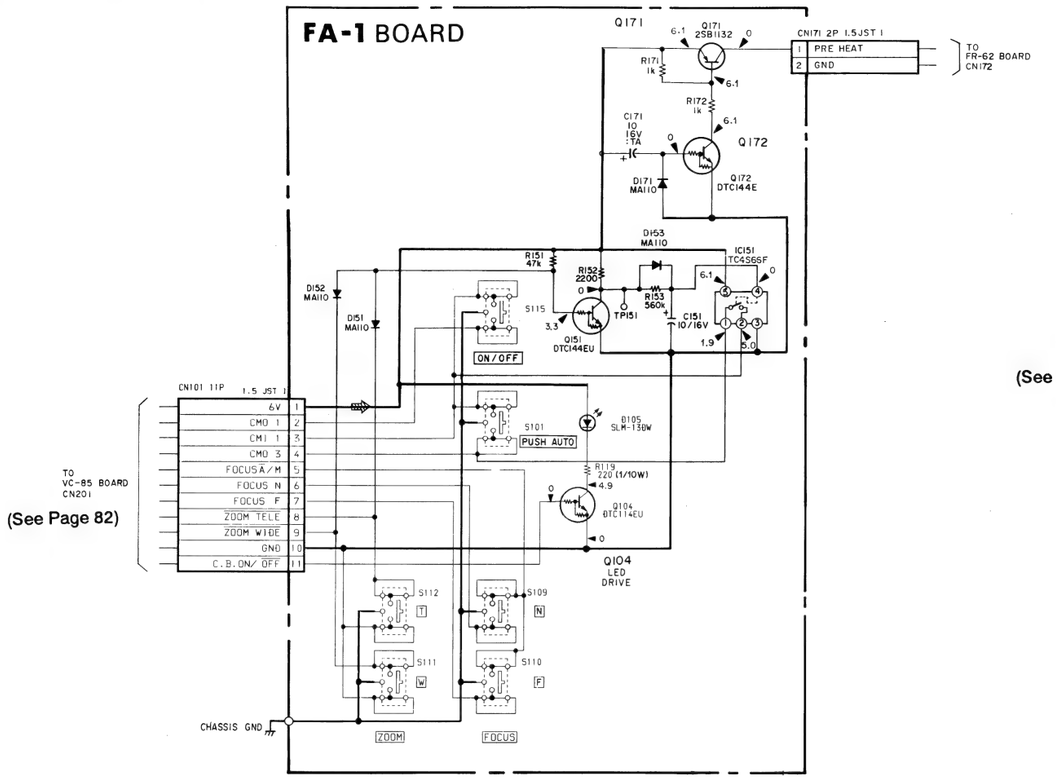
IC151	8-759-234-77	IC	TC4S66F

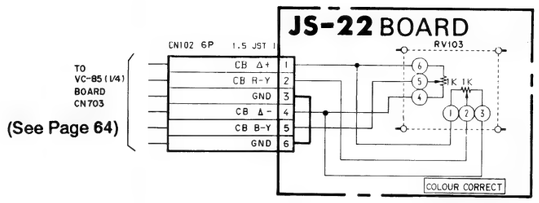
< TRANSISTOR >

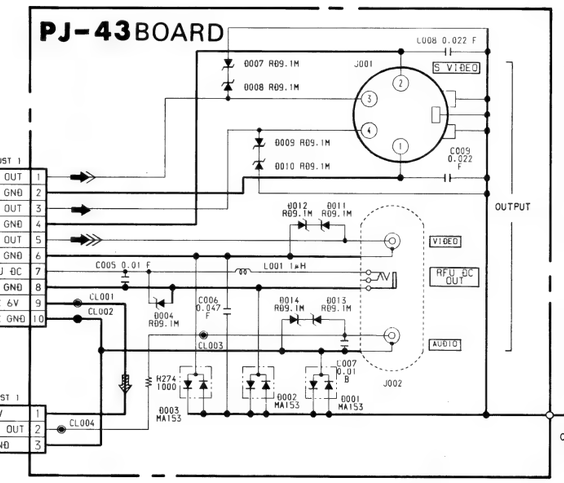
Q104	8-729-907-00	TRANSISTOR	DTC114EU
Q151	8-729-905-18	TRANSISTOR	DTC144EU
Q171	8-729-106-60	TRANSISTOR	2SB1115A
Q172	8-729-905-18	TRANSISTOR	DTC144EU

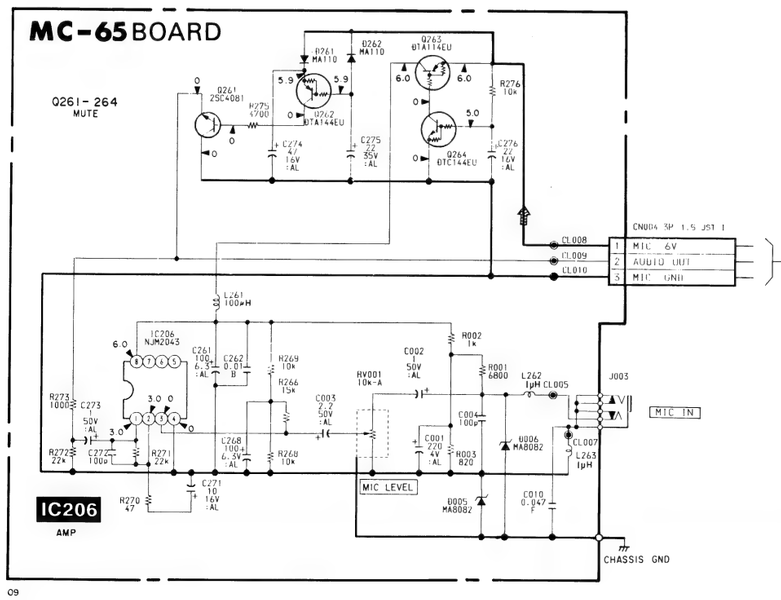
FUNCTION/MIC AMP **FUNCTION/MIC AMP**

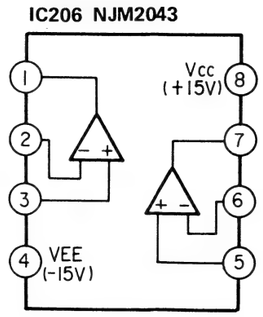
— Ref. No. FA-1 BOARD: 2000 series, JS-22 BOARD: 5000 series, PJ-43 BOARD: 6000 series, MC-65 BOARD: 8000 series —











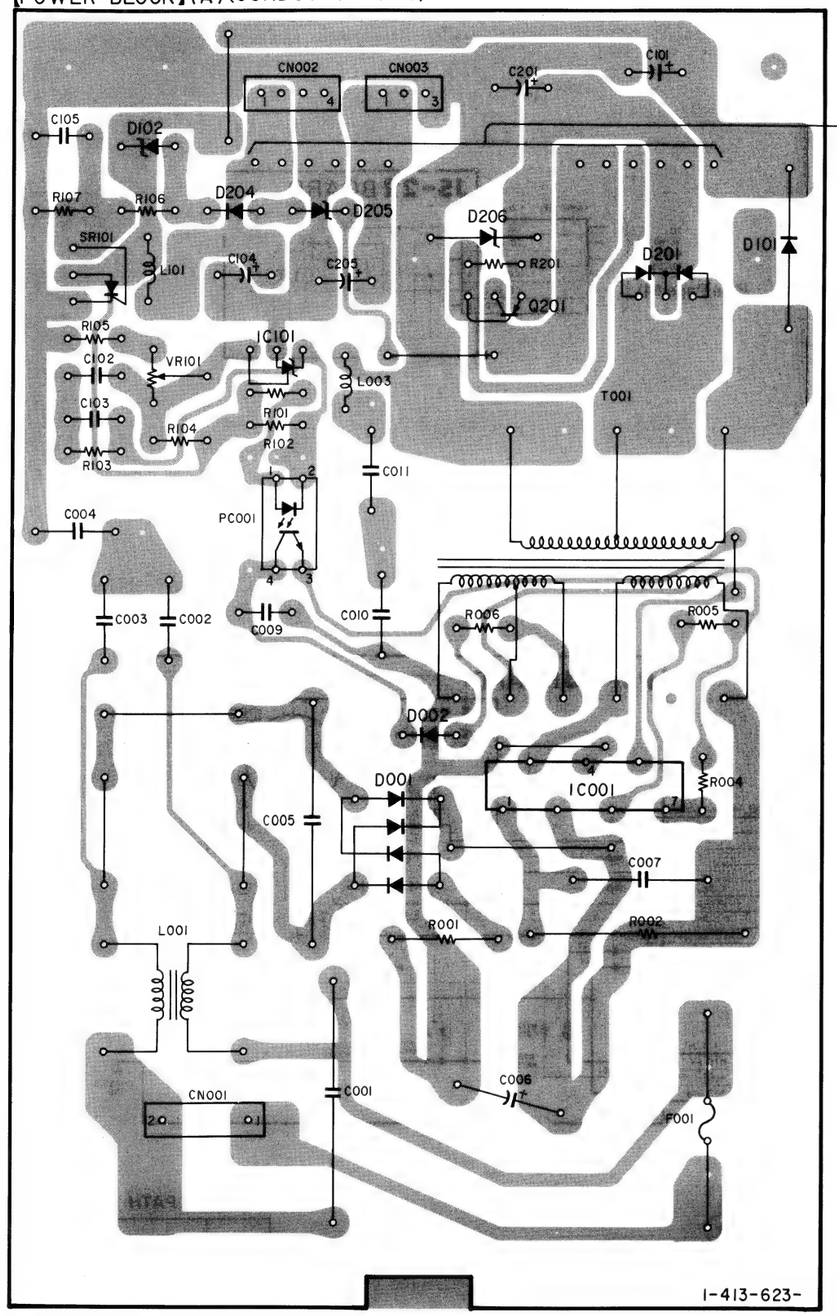
- **SIGNAL PATH**

	VIDEO SIGNAL			AUDIO SIGNAL
	CHROMA	Y	Y/CHROMA/DATA	
REC	➡	➡	➡	
PB				

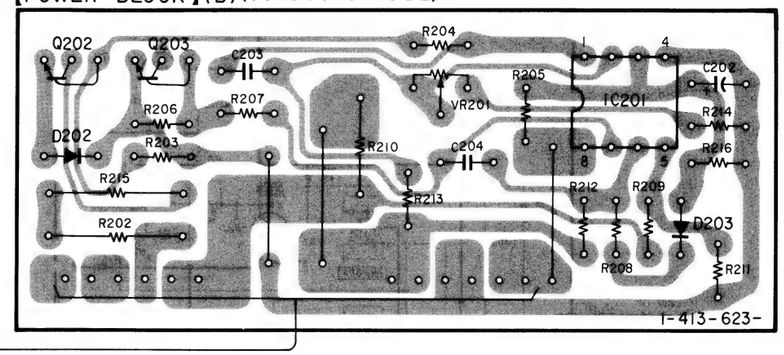
POWER BLOCK (POWER) PRINTED WIRING BOARD

— Ref. No. POWER BLOCK BOARD: 9000 series —

【POWER BLOCK】(A)(CONDUCTOR SIDE)



【POWER BLOCK】(B)(CONDUCTOR SIDE)



1-413-623-21 POWER BLOCK BOARD
****
(Ref. No 9,000 Series)

< DIODE >

D001	8-719-510-06	DIODE	SIWB60
D002	9-998-444-01	DIODE	1SS178
D101	8-719-948-59	DIODE	ERB93-02
D102	9-998-446-01	DIODE	RD15ESAB
D201	8-719-510-37	DIODE	D5LC20U
D202	9-998-444-01	DIODE	1SS178
D203	9-998-444-01	DIODE	1SS178
D204	9-998-444-01	DIODE	1SS178
D205	9-998-448-01	DIODE	RD6.8ESAB
D206	9-900-656-01	DIODE	RD15FB2

< IC >

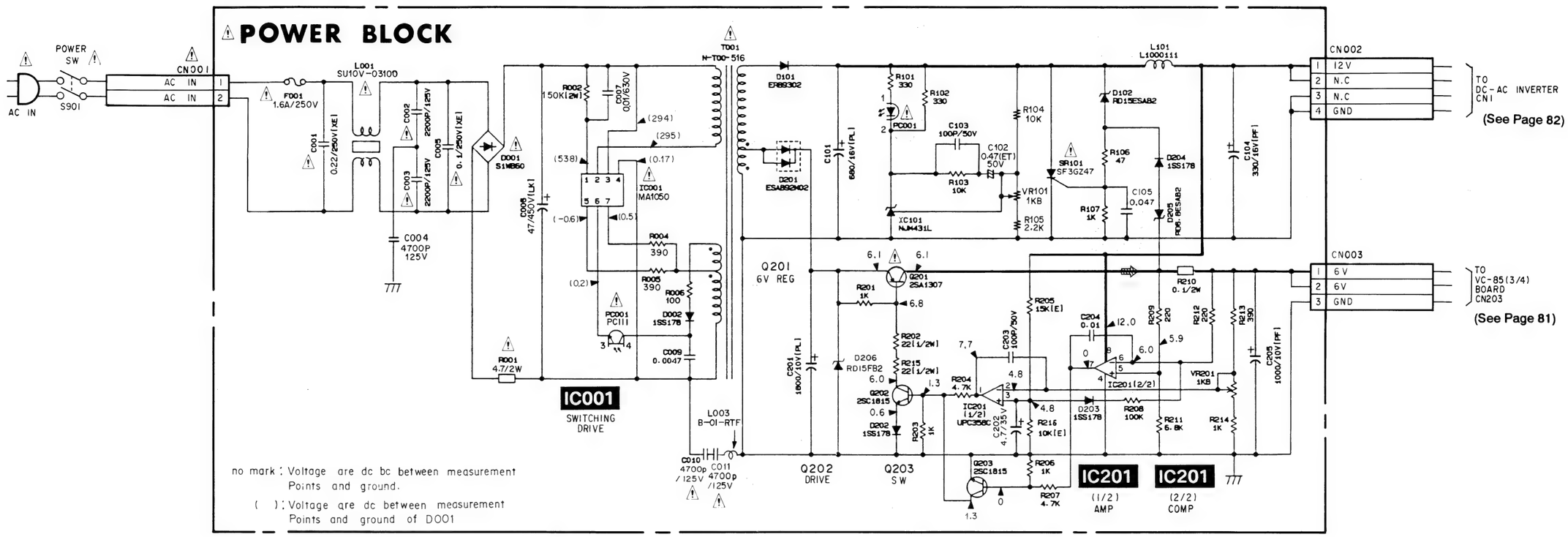
IC001	8-749-920-45	IC	MA1050
IC101	9-998-450-01	IC	NJM431L
IC201	8-759-135-80	IC	uPC358C

< TRANSISTOR >

Q201	9-998-454-01	TRANSISTOR	2SA1307
Q202	9-998-455-01	TRANSISTOR	2SC1815
Q203	9-998-455-01	TRANSISTOR	2SC1815

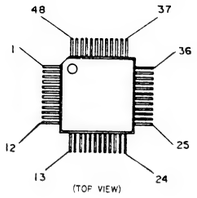
POWER BLOCK (POWER) SCHEMATIC DIAGRAM

— Ref. No. POWER BLOCK BOARD: 9000 series —

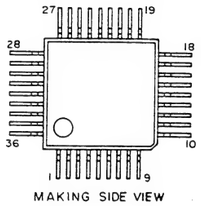


4-3. SEMICONDUCTORS

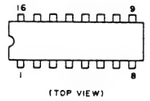
CXA1072R
CXA1339R
CXD1204R
MC68HC05N4-SC406667



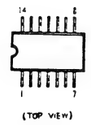
CXD1159Q



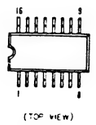
CXD1172AM
HD14053BFP
SN74HC174ANS
TC4053BF



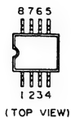
CX20095A
HD14066BFP
MC14066BF
TC4001BF



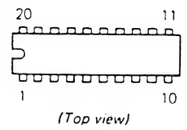
HD14052BFP
MC14052BF
MC14053BF
MC74HC4053F
MPC1725M
TC4053BF



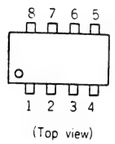
LM324NS
LM358PS
RC2043M-D
μPC393G2



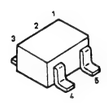
MB88341PFV



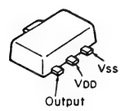
MM1036XF
TL026CPS



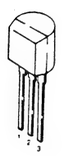
SC14S66F
TC4S66F



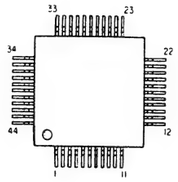
S-8054ALB-LM-S
S-8054HN-CB



S-81350HG



μPD7508BGB-522



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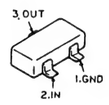
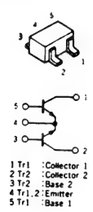
2SC2712-YG
2SC3859
2SC4081-R

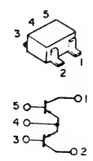
DTA144EU
DTC114EU
DTC144EU
DTC144WU



XN1213
XN1216



XN1401



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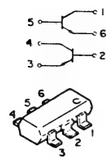
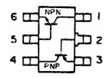
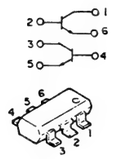


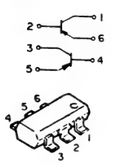
XN4601



XN6215
XN6501



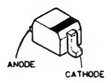
XN6401



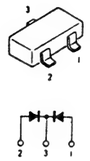
2SB1115A

2SK300-3

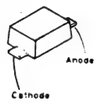
MA110



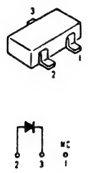
MA141WK
MA152WK



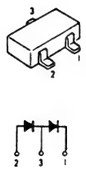
MA8082-M



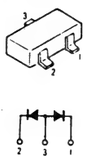
RD9.1M-B1



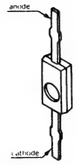
1SS226



1SS181



1T32

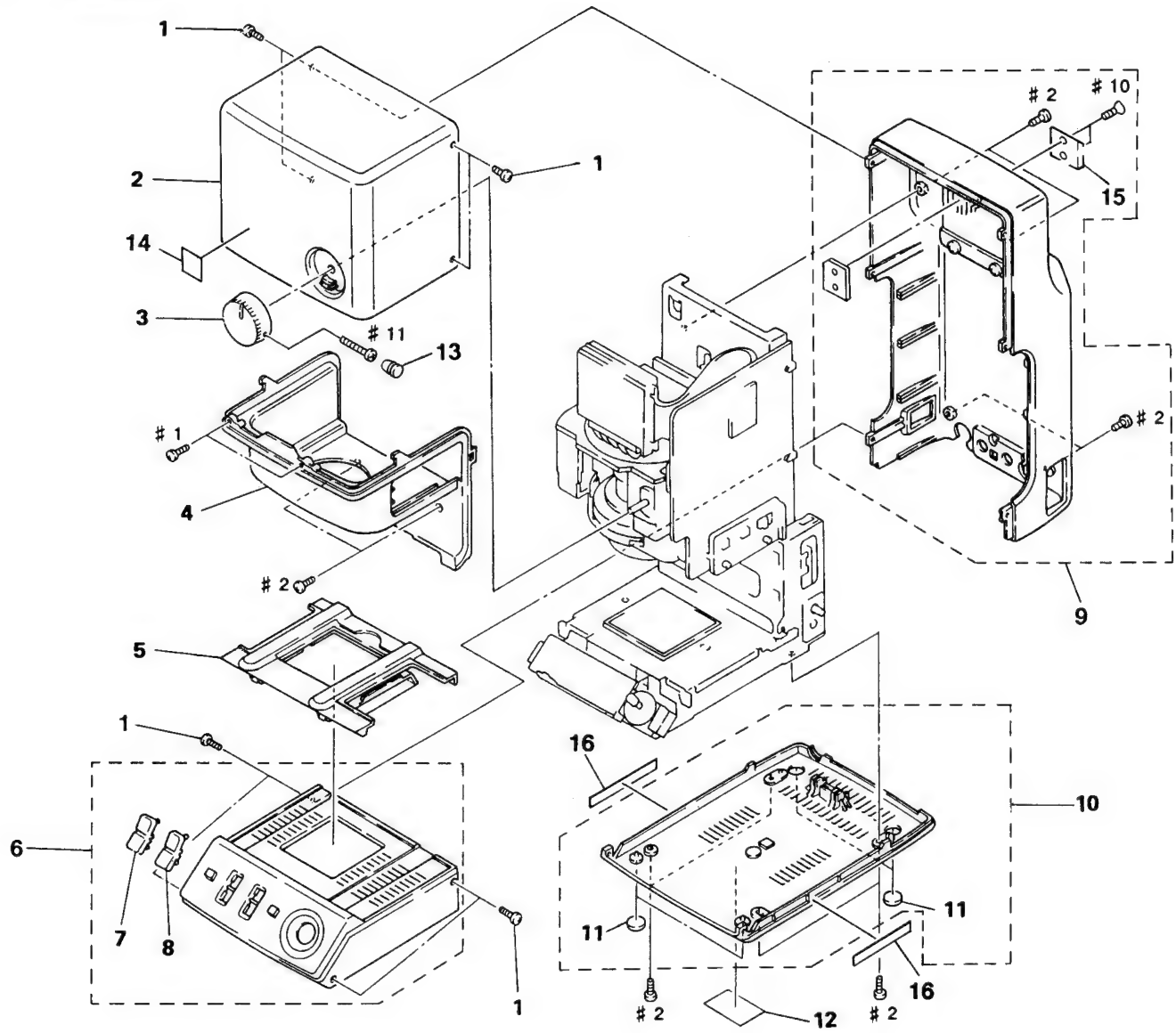


SECTION 5
EXPLODED VIEWS

NOTE:
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

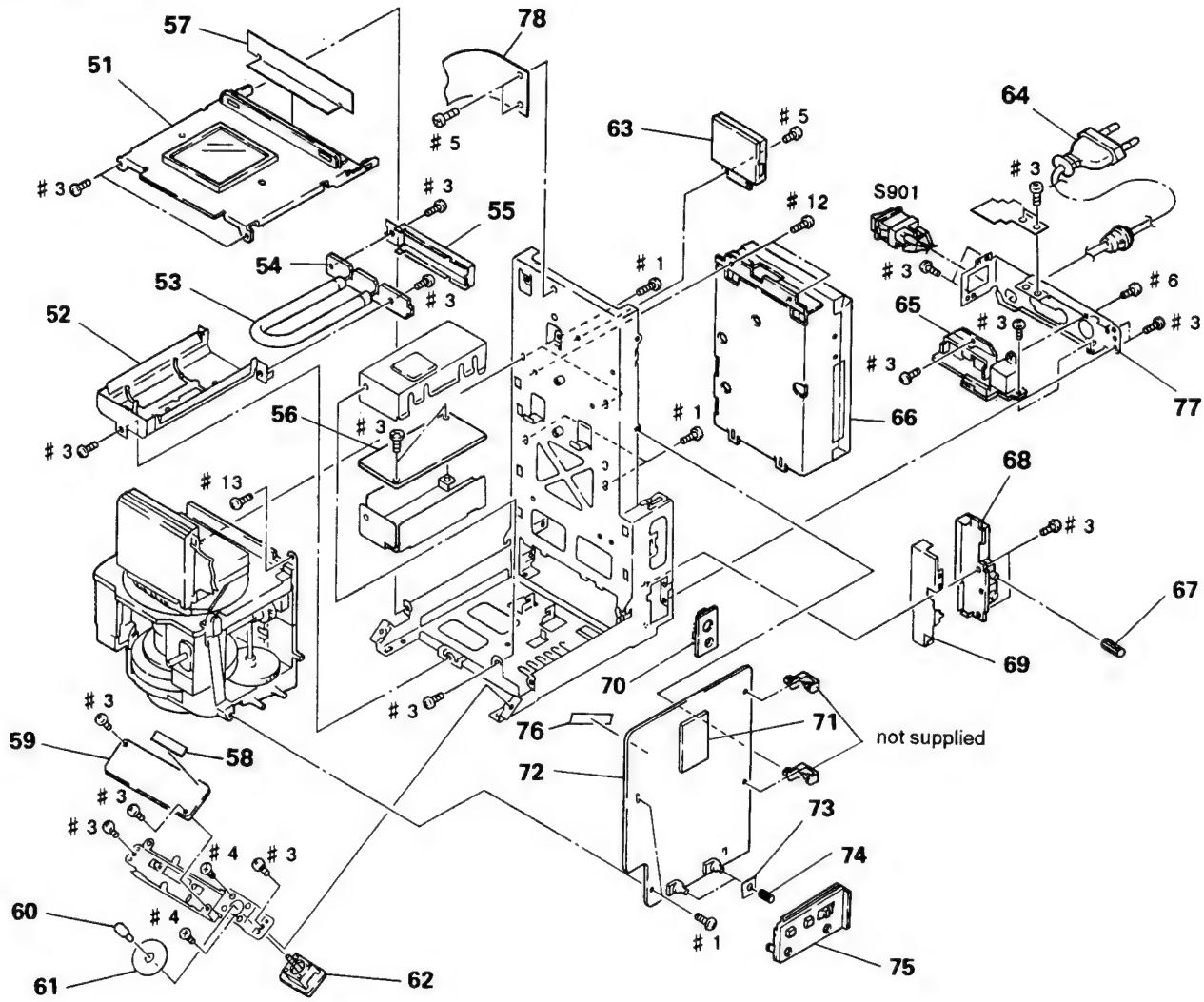
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

5-1. CABINET



Ref. No.	Part No.	Description	Remark
1	3-719-381-11	SCREW (M2X5)	
2	X-3940-410-1	CABINET ASSY, TOP	
3	X-3940-474-1	KNOB ASSY, DIAL	
4	3-941-663-11	CABINET (MID)	
5	X-3940-418-1	GUIDE ASSY, FILM	
6	X-3941-084-1	PANEL ASSY, FRONT	
7	3-941-844-11	BUTTON, FOCUS SW	
8	3-941-844-01	BUTTON, SW	
9	X-3940-767-1	CABINET ASSY, REAR	
10	X-3940-419-1	CABINET ASSY, BOTTOM	
11	3-941-861-01	FOOT, RUBBER	
12	* 3-945-014-01	LABEL, MODEL NUMBER (AEP)	
12	* 3-945-497-01	LABEL, MODEL NUMBER (E)	
13	3-942-084-01	KNOB, CAP	
14	3-703-713-21	STICKER, SONY SYMBOL (10)	
15	3-724-511-01	SHOE, ACCESSORY	
16	3-839-335-01	CUSHION	

5-2. CHASSIS

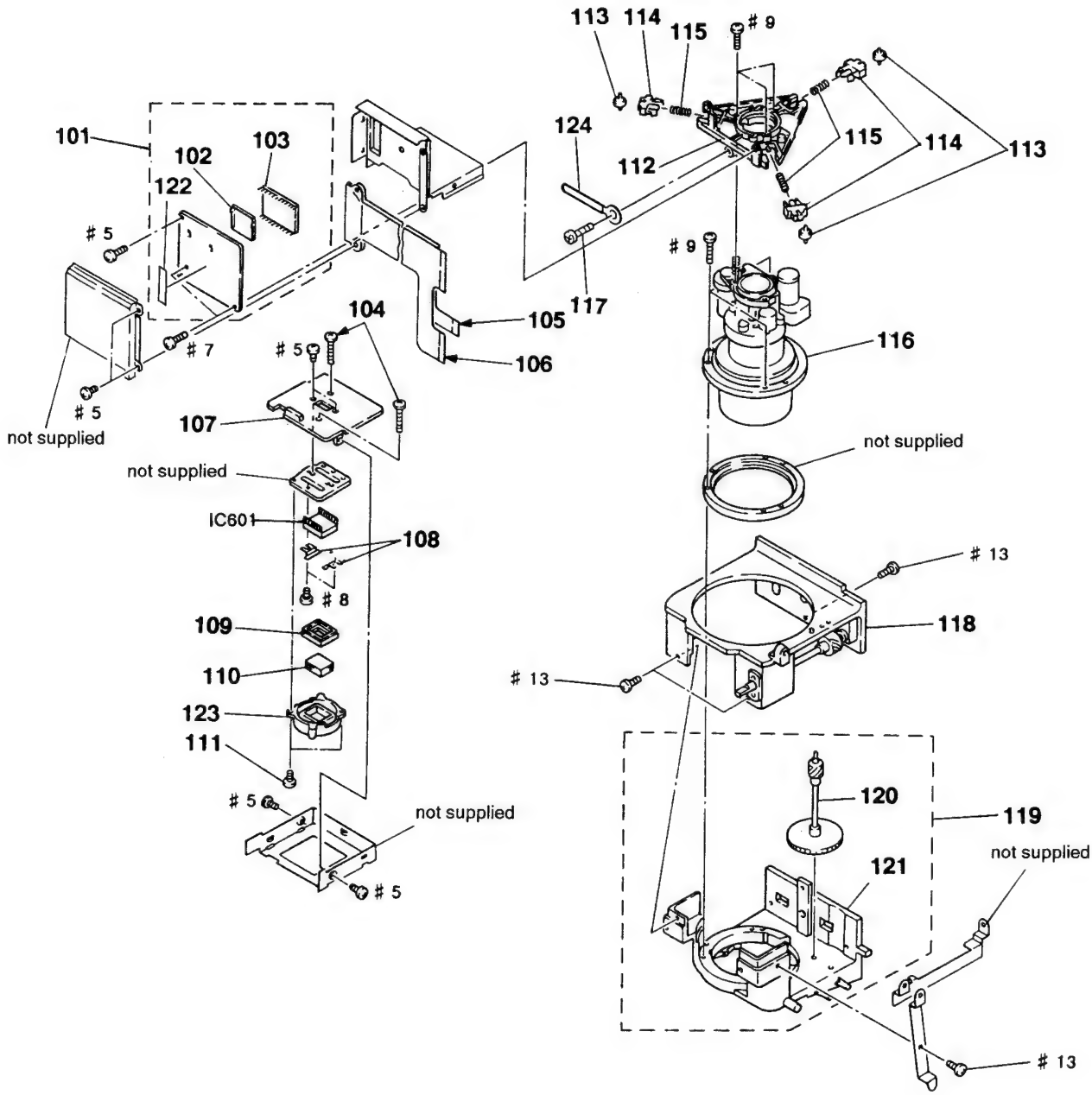


The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
51	X-3940-413-1	COVER ASSY, FLUORESCENT LAMP	
52	X-3940-360-1	CASE ASSY, LIGHT	
53	1-518-679-11	FLUORESCENT TUBE	
54	* A-7071-500-A	FR-62 BOARD, COMPLETE	
55	* X-3940-409-1	GUARD ASSY, LAMP	
56	⚠ 1-466-504-21	INVERTER, DC-AC	
57	3-943-578-01	PLATE, LIGHT INTERCEPTION	
58	3-831-441-11	CUSHION	
59	* A-7062-933-A	FA-1 BOARD, COMPLETE	
60	3-941-860-01	KNOB, JOY STICK	
61	3-941-858-01	BLIND, JOY STICK	
62	* A-7062-934-A	JS-22 BOARD, COMPLETE	
63	1-466-230-21	CONVERTER UNIT, D/D	
64	⚠ 1-555-795-00	CORD, POWER, EULO PLUG	
65	* A-7062-935-A	PJ-43 BOARD, COMPLETE	

Ref. No.	Part No.	Description	Remark
66	⚠ 1-413-623-21	POWER BLOCK	
67	3-941-676-01	KNOB, MICROPHONE	
68	* A-7062-932-A	MC-65 BOARD, COMPLETE	
69	* X-3940-541-1	SHIELD (UPPER) ASSY, VOL PCB	
70	3-941-851-11	PANEL (MICROPHONE JACK)	
71	A-7068-193-A	MX-7PH BOARD, COMPLETE (HIC)	
72	* A-7062-931-A	VC-85 BOARD, COMPLETE	
73	3-942-525-01	BLIND (1), KNOB	
74	3-941-670-01	KNOB, ROTARY	
75	X-3941-083-1	PANEL ASSY, SIDE	
76	3-831-441-XX	CUSHION (5)	
77	X-3941-082-1	FRAME ASSY, T	
78	1-641-286-11	FP-480 FLEXIBLE BOARD (AEP)	
S901	⚠ 1-572-810-11	SWITCH, SEESAW (AC POWER)	

5-3. LENS



Ref. No.	Part No.	Description	Remark
101	* A-7062-930-A	GE-10 BOARD, COMPLETE	
102	* X-3739-811-1	PLATE ASSY, SHIELD, CD	
103	A-7068-165-A	DT-77B BOARD, COMPLETE (HIC)	
104	3-747-151-01	SCREW (2X16)	
105	1-638-487-11	FP-412 FLEXIBLE BOARD	
106	1-638-486-11	FP-378 FLEXIBLE BOARD	
107	* A-7062-929-A	CD-52 BOARD, COMPLETE	
108	* 3-725-175-01	STOPPER, CCD	
109	* 3-725-177-01	RUBBER, SEAL	
110	1-547-381-12	FILTER BLOCK, OPTICAL	
111	3-738-519-11	SCREW (M2X3), +B	
112	3-942-011-01	HOLDER (2), FP	
113	3-941-850-01	ROLLER (SLIDE)	

Ref. No.	Part No.	Description	Remark
114	3-941-664-01	SLIDE (HOLDER)	
115	3-941-841-01	SPRING (2), COMPRESSION	
116	1-547-480-11	LENS, ZOOM	
117	3-727-903-01	SCREW (2X5), TAPPING, + B	
118	X-3940-515-1	LENS (BL) (A) ASSY	
119	X-3940-514-1	LENS (BL) (B) ASSY	
120	X-3940-516-1	GEAR ASSY	
121	3-943-257-01	LENS (BL) (B)	
122	3-831-441-XX	CUSHION (5)	
123	3-725-176-11	HOLDER, CCD	
124	* 3-701-822-00	HOLDER, WIRE	
IC601	8-752-604-70	IC ICX039AN-1 (CCD IMAGER)	

PHV-A7E

CD-52

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ , for example:
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH

Ref. No.	Part No.	Description			Remark
	* A-7062-929-A	CD-52 BOARD, COMPLETE			
		**********			
		(Ref. No 1,000 Series)			
		< CAPACITOR >			
C601	1-126-200-11	ELECT CHIP	10uF	20% 35V	
C602	1-162-970-11	CERAMIC CHIP	0.01uF	10% 25V	
C604	1-135-091-00	TANTALUM CHIP	1uF	20% 16V	
C605	1-126-607-11	ELECT CHIP	47uF	20% 4V	
C607	1-162-964-11	CERAMIC CHIP	0.001uF	10% 50V	
C622	1-162-964-11	CERAMIC CHIP	0.001uF	10% 50V	
C626	1-164-360-11	CERAMIC CHIP	0.1uF	16V	
C643	1-126-193-11	ELECT	1uF	20% 50V	
C644	1-164-360-11	CERAMIC CHIP	0.1uF	16V	
C647	1-164-360-11	CERAMIC CHIP	0.1uF	16V	
C648	1-164-005-11	CERAMIC CHIP	0.47uF	25V	
C649	1-126-602-11	ELECT CHIP	3.3uF	20% 50V	
		< CONNECTOR >			
CN602	* 1-569-077-11	CONNECTOR, BOARD TO BOARD (F) 18P			
		< DIODE >			
D623	8-719-404-46	DIODE	MA110		
D624	8-719-820-05	DIODE	1SS181		
D627	8-719-800-76	DIODE	1SS226		
D628	8-719-404-46	DIODE	MA110		
		< COIL >			
L601	1-412-032-11	INDUCTOR, CHIP 100uH			
		< TRANSISTOR >			
Q601	8-765-420-02	TRANSISTOR	2SK300-3		
Q622	8-729-403-42	TRANSISTOR	XN1401		
Q623	8-729-421-23	TRANSISTOR	XN1216		
Q625	8-729-905-35	TRANSISTOR	2SC4081-R		
Q626	8-729-402-84	TRANSISTOR	XN4601		
		< RESISTOR >			
R601	1-216-848-11	METAL CHIP	180K	5% 1/16W	
R602	1-216-838-11	METAL CHIP	27K	5% 1/16W	
R603	1-216-816-11	METAL CHIP	390	5% 1/16W	
R604	1-216-809-11	METAL CHIP	100	5% 1/16W	
R605	1-216-828-11	METAL CHIP	3.9K	5% 1/16W	
R622	1-216-857-11	METAL CHIP	1M	5% 1/16W	
R625	1-216-845-11	METAL CHIP	100K	5% 1/16W	
R628	1-216-843-11	METAL CHIP	68K	5% 1/16W	
R629	1-216-833-11	METAL CHIP	10K	5% 1/16W	
R630	1-216-835-11	METAL CHIP	15K	5% 1/16W	
R631	1-216-844-11	METAL CHIP	82K	5% 1/16W	
R632	1-216-844-11	METAL CHIP	82K	5% 1/16W	
R633	1-216-850-11	METAL CHIP	270K	5% 1/16W	
R636	1-216-833-11	METAL CHIP	10K	5% 1/16W	
R638	1-216-836-11	METAL CHIP	18K	5% 1/16W	
R639	1-216-837-11	METAL CHIP	22K	5% 1/16W	
R640	1-216-837-11	METAL CHIP	22K	5% 1/16W	
R669	1-216-825-11	METAL CHIP	2.2K	5% 1/16W	
R671	1-216-845-11	METAL CHIP	100K	5% 1/16W	
R680	1-216-825-11	METAL CHIP	2.2K	5% 1/16W	
R693	1-216-821-11	METAL CHIP	1K	5% 1/16W	

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Ref. No.	Part No.	Description			Remark
	* A-7062-933-A	FA-1 BOARD, COMPLETE			
		**********			
		(Ref. No 2,000 Series)			
		< CAPACITOR >			
C151	1-135-159-21	TANTALUM CHIP 10uF	10%	20V	
C171	1-135-159-21	TANTALUM CHIP 10uF	10%	20V	
		< CONNECTOR >			
CN101	1-568-969-11	PIN, CONNECTOR (PC BOARD) 11P			
CN171	1-566-757-11	PIN, CONNECTOR (PC BOARD) 2P			
		< DIODE >			
D105	8-719-928-13	DIODE SLM13DW			
D151	8-719-404-46	DIODE MA110			
D152	8-719-404-46	DIODE MA110			
D153	8-719-404-46	DIODE MA110			
D171	8-719-404-46	DIODE MA110			
		< IC >			
IC151	8-759-234-77	IC TC4S66F			
		< TRANSISTOR >			
Q104	8-729-907-00	TRANSISTOR DTC114EU			
Q151	8-729-905-18	TRANSISTOR DTC144EU			
Q171	8-729-106-60	TRANSISTOR 2SB1115A			
Q172	8-729-905-18	TRANSISTOR DTC144EU			
		< RESISTOR >			
R119	1-216-635-11	METAL CHIP 220	0.5%	1/10W	
R151	1-216-841-11	METAL CHIP 47K	5%	1/16W	
R152	1-216-825-11	METAL CHIP 2.2K	5%	1/16W	
R153	1-216-854-11	METAL CHIP 560K	5%	1/16W	
R171	1-216-821-11	METAL CHIP 1K	5%	1/16W	
R172	1-216-821-11	METAL CHIP 1K	5%	1/16W	
		< SWITCH >			
S101	1-571-787-11	SWITCH, TACTILE (PUSH AUTO)			
S109	1-571-787-11	SWITCH, TACTILE (FOCUS)			
S110	1-571-787-11	SWITCH, TACTILE (FOCUS)			
S111	1-571-787-11	SWITCH, TACTILE (ZOOM)			
S112	1-571-787-11	SWITCH, TACTILE (ZOOM)			
S115	1-571-787-11	SWITCH, TACTILE (ON/OFF)			

****

Ref. No.	Part No.	Description			Remark
	* A-7071-500-A	FR-62 BOARD, COMPLETE			
		**********			
		(Ref. No 3,000 Series)			
		< CONNECTOR >			
CN062	1-506-468-11	CONNECTOR 3P, MALE			
CN172	1-565-874-11	PIN, CONNECTOR (PC BOARD) 2P			

****

	* A-7062-930-A	GE-10 BOARD, COMPLETE			
		**********			
		(Ref. No 4,000 Series)			
	A-7068-165-A	DT-77B BOARD, COMPLETE (HIC)			

	3-831-441-XX	CUSHION (5)			
		< CAPACITOR >			
C621	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C624	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C625	1-135-166-21	TANTALUM CHIP 47uF	10%	10V	
C627	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C628	1-162-964-11	CERAMIC CHIP 0.001uF	10%	50V	
C629	1-163-809-11	CERAMIC CHIP 0.047uF	10%	25V	
C630	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C631	1-162-638-11	CERAMIC CHIP 1uF		16V	
C632	1-135-166-21	TANTALUM CHIP 47uF	10%	10V	
C634	1-162-945-11	CERAMIC CHIP 22PF	5%	50V	
C635	1-162-638-11	CERAMIC CHIP 1uF		16V	
C636	1-162-970-11	CERAMIC CHIP 0.01uF	10%	25V	
C637	1-162-919-11	CERAMIC CHIP 22PF	5%	50V	
C638	1-162-962-11	CERAMIC CHIP 470PF	10%	50V	
C640	1-162-964-11	CERAMIC CHIP 0.001uF	10%	50V	
C646	1-162-945-11	CERAMIC CHIP 22PF	5%	50V	
C650	1-162-945-11	CERAMIC CHIP 22PF	5%	50V	
C687	1-162-966-11	CERAMIC CHIP 0.0022uF	10%	50V	
C689	1-162-966-11	CERAMIC CHIP 0.0022uF	10%	50V	
C862	1-164-360-11	CERAMIC CHIP 0.1uF		16V	
C868	1-164-360-11	CERAMIC CHIP 0.1uF		16V	
C869	1-164-360-11	CERAMIC CHIP 0.1uF		16V	
		< CONNECTOR >			
CN603	1-566-757-11	PIN, CONNECTOR (PC BOARD) 2P			
CN604	1-568-335-11	CONNECTOR, BOARD TO BOARD 18P			
CN852	1-565-880-11	PIN, CONNECTOR (PC BOARD) 8P			
CN853	1-565-874-11	PIN, CONNECTOR (PC BOARD) 2P			
CN854	1-565-874-11	PIN, CONNECTOR (PC BOARD) 2P			
CN855	* 1-565-876-11	PIN, CONNECTOR (PC BOARD) 4P			
CN856	1-565-876-11	PIN, CONNECTOR (PC BOARD) 4P			

GE-10 DT-77B

Ref. No.	Part No.	Description	Remark
		< TRIMMER >	
CT621	1-141-368-11	CAP, CHIP TRIMMER	
		< DIODE >	
D621	8-719-404-46	DIODE MA110	
D622	8-719-404-46	DIODE MA110	
D625	8-719-949-46	DIODE 1T32	
D631	8-719-404-46	DIODE MA110	
		< IC >	
IC621	8-752-326-08	IC CXD1159Q	
		< COIL >	
L621	1-412-029-11	INDUCTOR CHIP 10uH	
L622	1-412-029-11	INDUCTOR CHIP 10uH	
L651	1-410-369-11	INDUCTOR CHIP 1uH	
L652	1-410-369-11	INDUCTOR CHIP 1uH	
L653	1-410-369-11	INDUCTOR CHIP 1uH	
L682	1-410-369-11	INDUCTOR CHIP 1uH	
L683	1-410-369-11	INDUCTOR CHIP 1uH	
L684	1-410-369-11	INDUCTOR CHIP 1uH	
		< TRANSISTOR >	
Q621	8-729-402-84	TRANSISTOR XN4601	
Q624	8-729-402-84	TRANSISTOR XN4601	
Q627	8-729-402-84	TRANSISTOR XN4601	
Q628	8-729-905-35	TRANSISTOR 2SC4081-R	
Q630	8-729-905-35	TRANSISTOR 2SC4081-R	
Q633	8-729-402-84	TRANSISTOR XN4601	
		< RESISTOR >	
R606	1-216-864-11	METAL CHIP 0 5% 1/16W	
R611	1-216-864-11	METAL CHIP 0 5% 1/16W	
R617	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R618	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R620	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R621	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R623	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R624	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R626	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R627	1-216-820-11	METAL CHIP 820 5% 1/16W	
R634	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R635	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R637	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R641	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R642	1-216-842-11	METAL CHIP 56K 5% 1/16W	
R643	1-216-843-11	METAL CHIP 68K 5% 1/16W	

Ref. No.	Part No.	Description	Remark
R644	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R645	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R646	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R647	1-216-813-11	METAL CHIP 220 5% 1/16W	
R648	1-216-848-11	METAL CHIP 180K 5% 1/16W	
R649	1-216-815-11	METAL CHIP 330 5% 1/16W	
R651	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R652	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R654	1-216-864-11	METAL CHIP 0 5% 1/16W	
R655	1-216-864-11	METAL CHIP 0 5% 1/16W	
R656	1-216-809-11	METAL CHIP 100 5% 1/16W	
R657	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R658	1-216-862-11	METAL GLAZE 2.7M 5% 1/16W	
R659	1-216-809-11	METAL CHIP 100 5% 1/16W	
R660	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R662	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R663	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R664	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R665	1-216-813-11	METAL CHIP 220 5% 1/16W	
R666	1-216-813-11	METAL CHIP 220 5% 1/16W	
R672	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R673	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R674	1-216-864-11	METAL CHIP 0 5% 1/16W	
R675	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R676	1-216-842-11	METAL CHIP 56K 5% 1/16W	
R677	1-216-835-11	METAL CHIP 15K 5% 1/16W	
R678	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R679	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R681	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R682	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R683	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R685	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R686	1-216-864-11	METAL CHIP 0 5% 1/16W	
R687	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R688	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R689	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R690	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R691	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R692	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R694	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R695	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R696	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R697	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R698	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R699	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R700	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R701	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R879	1-216-816-11	METAL CHIP 390 5% 1/16W	
R880	1-216-816-11	METAL CHIP 390 5% 1/16W	

Ref. No.	Part No.	Description			Remark
		< VIBRATOR >			
X621	1-577-119-11	OSCILLATOR, CRYSTAL			
X622	1-567-733-11	VIBRATOR, CRYSTAL (17.7MHz)			
**********					
* A-7062-934-A		JS-22 BOARD, COMPLETE			
		**********			
		(Ref. No 5,000 Series)			
		< CONNECTOR >			
CN102	1-568-964-11	PIN, CONNECTOR (PC BOARD) 6P			
		< VARIABLE RESISTOR >			
RV103	1-237-423-21	RES, VAR, CARBON 1K/1K (COLOUR CORRECT)			
**********					
* A-7062-932-A		MC-65 BOARD, COMPLETE			
		**********			
		(Ref. No 8,000 Series)			
* 3-941-954-01		SHIELD (LOWER), VOL PC BOARD			
3-942-526-01		BLIND (2), KNOB			
		< CAPACITOR >			
C001	1-126-246-11	ELECT CHIP	220uF	20%	4V
C002	1-126-193-11	ELECT	1uF	20%	50V
C003	1-126-601-11	ELECT	2.2uF	20%	50V
C004	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C010	1-164-361-11	CERAMIC CHIP	0.047uF		16V
C261	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C262	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C268	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C271	1-124-779-00	ELECT CHIP	10uF	20%	16v
C272	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C273	1-126-193-11	ELECT	1uF	20%	50V
C274	1-126-204-11	ELECT CHIP	47uF	20%	16V
C275	1-126-400-11	ELECT	22uF	20%	35V
C276	1-126-395-11	ELECT	22uF	20%	16V
		< CONNECTOR >			
CN004	1-568-961-11	PIN, CONNECTOR (PC BOARD) 3P			
		< DIODE >			
D005	8-719-420-15	DIODE MA8082-M			
D006	8-719-420-15	DIODE MA8082-M			
D261	8-719-404-46	DIODE MA110			
D262	8-719-404-46	DIODE MA110			

Ref. No.	Part No.	Description			Remark
		< IC >			
IC206	8-759-981-58	IC RC2043M-D			
		< JACK >			
J003	1-507-834-31	JACK (MIC IN)			
		< COIL >			
L261	1-412-032-11	INDUCTOR CHIP 100uH			
L262	1-410-369-11	INDUCTOR CHIP 1uH			
L263	1-410-369-11	INDUCTOR CHIP 1uH			
		< TRANSISTOR >			
Q261	8-729-905-35	TRANSISTOR 2SC4081-R			
Q262	8-729-905-12	TRANSISTOR DTA144EU			
Q263	8-729-920-XX	TRANSISTOR DTA114EU			
Q264	8-729-905-18	TRANSISTOR DTC144EU			
		< RESISTOR >			
R001	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R002	1-216-821-11	METAL CHIP	1K	5%	1/16W
R003	1-216-820-11	METAL CHIP	820	5%	1/16W
R266	1-216-835-11	METAL CHIP	15K	5%	1/16W
R268	1-216-833-11	METAL CHIP	10K	5%	1/16W
R269	1-216-833-11	METAL CHIP	10K	5%	1/16W
R270	1-216-805-11	METAL CHIP	47	5%	1/16W
R271	1-216-837-11	METAL CHIP	22K	5%	1/16W
R272	1-216-837-11	METAL CHIP	22K	5%	1/16W
R273	1-216-821-11	METAL CHIP	1K	5%	1/16W
R275	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R276	1-216-833-11	METAL CHIP	10K	5%	1/16W
		< VARIABLE RESISTOR >			
RV001	1-238-047-11	RES, VAR, CARBON 10K (MIC LEVEL)			
**********					
* A-7062-935-A		PJ-43 BOARD, COMPLETE			
		**********			
		(Ref. No 6,000 Series)			
		< CAPACITOR >			
C005	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C006	1-164-361-11	CERAMIC CHIP	0.047uF		16V
C007	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C008	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C009	1-162-995-11	CERAMIC CHIP	0.022uF		50V

PJ-43 VC-85 MX-7PH

Ref. No.	Part No.	Description			Remark
		< CONNECTOR >			
CN001	1-568-968-11	PIN, CONNECTOR (PC BOARD) 10P			
CN003	1-568-961-11	PIN, CONNECTOR (PC BOARD) 3P			
		< DIODE >			
D001	8-719-800-76	DIODE 1SS226			
D002	8-719-800-76	DIODE 1SS226			
D003	8-719-800-76	DIODE 1SS226			
D004	8-719-106-43	DIODE RD9.1M-B1			
D007	8-719-106-43	DIODE RD9.1M-B1			
D008	8-719-106-43	DIODE RD9.1M-B1			
D009	8-719-106-43	DIODE RD9.1M-B1			
D010	8-719-106-43	DIODE RD9.1M-B1			
D011	8-719-106-43	DIODE RD9.1M-B1			
D012	8-719-106-43	DIODE RD9.1M-B1			
D013	8-719-106-43	DIODE RD9.1M-B1			
D014	8-719-106-43	DIODE RD9.1M-B1			
		< JACK >			
J001	1-566-847-41	CONNECTOR, (S) TERMINAL 4P (S VIDEO OUT)			
J002	1-537-005-21	JACK BOARD (VIDEO/AUDIO/RFUDC OUT)			
		< COIL >			
L001	1-410-369-11	INDUCTOR CHIP 1uH			
		< RESISTOR >			
R274	1-216-821-11	METAL CHIP 1K	5%	1/16W	
		**********			
	* A-7062-931-A	VC-85 BOARD, COMPLETE			
		**********			
		(Ref.No 7,000 Series)			
	A-7068-193-A	MX-7PH BOARD, COMPLETE (HIC)			

	3-831-441-XX	CUSHION (5)			
		< CAPACITOR >			
C100	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
C102	1-124-779-00	ELECT CHIP	10uF	20%	16v
C103	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C104	1-162-638-11	CERAMIC CHIP	1uF		16V
C105	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C106	1-126-601-11	ELECT	2.2uF	20%	50V
C161	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C201	1-135-158-21	TANTALUM CHIP	15uF	20%	4V
C202	1-163-034-00	CERAMIC CHIP	0.033uF		50V
C203	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C204	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C205	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C206	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C207	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C208	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C209	1-135-158-21	TANTALUM CHIP	15uF	20%	4V
C210	1-126-246-11	ELECT CHIP	220uF	20%	4V
C211	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C212	1-126-246-11	ELECT CHIP	220uF	20%	4V
C213	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C214	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C215	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C216	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C217	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C218	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C219	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C220	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C221	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C222	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C223	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C224	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C225	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C227	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C228	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C241	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C242	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C243	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C244	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C245	1-124-779-00	ELECT CHIP	10uF	20%	16v
C246	1-124-779-00	ELECT CHIP	10uF	20%	16v
C247	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C248	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C249	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C250	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C266	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C505	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C506	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C507	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C508	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C509	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C510	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C511	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C512	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C513	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C515	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C521	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C522	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C523	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C524	1-126-205-11	ELECT CHIP	47uF	20%	6.3V

Ref. No.	Part No.	Description			Remark
C575	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C576	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C577	1-164-173-11	CERAMIC CHIP	0.0039uF	10%	50V
C578	1-124-779-00	ELECT CHIP	10uF	20%	16v
C579	1-162-638-11	CERAMIC CHIP	1uF		16V
C580	1-162-638-11	CERAMIC CHIP	1uF		16V
C641	1-162-942-11	CERAMIC CHIP	12PF	5%	50V
C703	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C704	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C705	1-162-946-11	CERAMIC CHIP	27PF	5%	50V
C706	1-135-091-00	TANTALUM CHIP	1uF	20%	16V
C707	1-162-638-11	CERAMIC CHIP	1uF		16V
C708	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C709	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C710	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C711	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C712	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C713	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C714	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C716	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C717	1-135-091-00	TANTALUM CHIP	1uF	20%	16V
C718	1-135-091-00	TANTALUM CHIP	1uF	20%	16V
C719	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C720	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C721	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C722	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C723	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C724	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C725	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C726	1-162-943-11	CERAMIC CHIP	15PF	5%	50V
C727	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C728	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C731	1-126-204-11	ELECT CHIP	47uF	20%	16V
C734	1-162-951-11	CERAMIC CHIP	68PF	5%	50V
C735	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C736	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C737	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C738	1-162-941-11	CERAMIC CHIP	10PF	0.5PF	50V
C739	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C740	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C741	1-162-944-11	CERAMIC CHIP	18PF	5%	50V
C742	1-135-091-00	TANTALUM CHIP	1uF	20%	16V
C743	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C744	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C746	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C747	1-162-941-11	CERAMIC CHIP	10PF	0.5PF	50V
C748	1-162-951-11	CERAMIC CHIP	68PF	5%	50V
C749	1-162-953-11	CERAMIC CHIP	100PF	5%	50V
C750	1-162-944-11	CERAMIC CHIP	18PF	5%	50V

Ref. No.	Part No.	Description			Remark
C751	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C752	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C753	1-135-091-00	TANTALUM CHIP	1uF	20%	16V
C754	1-162-638-11	CERAMIC CHIP	1uF		16V
C755	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C757	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C759	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C760	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C764	1-162-943-11	CERAMIC CHIP	15PF	5%	50V
C765	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C781	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C782	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C783	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C801	1-135-091-00	TANTALUM CHIP	1uF	20%	16V
C802	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C803	1-162-638-11	CERAMIC CHIP	1uF		16V
C804	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C806	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C807	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C808	1-135-072-21	TANTALUM CHIP	0.22uF	10%	35V
C809	1-124-779-00	ELECT CHIP	10uF	20%	16v
C810	1-126-602-11	ELECT CHIP	3.3uF	20%	50V
C811	1-126-602-11	ELECT CHIP	3.3uF	20%	50V
C812	1-126-602-11	ELECT CHIP	3.3uF	20%	50V
C813	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C851	1-162-638-11	CERAMIC CHIP	1uF		16V
C852	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C853	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C854	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C855	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C856	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C858	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C859	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C860	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C861	1-124-779-00	ELECT CHIP	10uF	20%	16v
C863	1-163-075-00	CERAMIC CHIP	0.047uF		50V
C864	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C865	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C867	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C903	1-162-638-11	CERAMIC CHIP	1uF		16V
C906	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C907	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V
C909	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C910	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C911	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C912	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C914	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C915	1-162-941-11	CERAMIC CHIP	10PF	0.5PF	50V

Ref. No.	Part No.	Description			Remark
C916	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C917	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C918	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C919	1-135-157-21	TANTALUM CHIP	10uF	20%	6.3V
C920	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C921	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C922	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C923	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C924	1-162-928-11	CERAMIC CHIP	120PF	5%	50V
C925	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C930	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C931	1-135-091-00	TANTALUM CHIP	1uF	20%	16V
C932	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C933	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C934	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C935	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C936	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C937	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V
C938	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C939	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C940	1-135-155-21	TANTALUM CHIP	4.7uH	10%	16V
C941	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V
C942	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C951	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C952	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C953	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C954	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C955	1-164-360-11	CERAMIC CHIP	0.1uF		16V

< CONNECTOR >

CN201	* 1-565-883-11	PIN, CONNECTOR (PC BOARD)	11P
CN203	1-506-482-11	CONNECTOR 3P, MALE	
CN204	* 1-565-875-11	PIN, CONNECTOR (PC BOARD)	3P
CN208	* 1-565-882-11	PIN, CONNECTOR (PC BOARD)	10P
CN209	1-566-760-11	PIN, CONNECTOR (PC BOARD)	5P
CN701	1-565-877-11	PIN, CONNECTOR (PC BOARD)	5P
CN702	* 1-565-876-11	PIN, CONNECTOR (PC BOARD)	4P
CN703	1-565-878-11	PIN, CONNECTOR (PC BOARD)	6P
CN705	1-580-106-21	CONNECTOR, FPC 28P	
CN706	1-569-478-21	CONNECTOR, FPC 20P	
CN707	1-566-527-11	CONNECTOR, FPC (ZIF) 11P	
CN902	* 1-565-543-11	PIN, CONNECTOR (PC BOARD)	4P

< DIODE >

D101	8-719-404-35	DIODE	MA141WK
D102	8-719-404-35	DIODE	MA141WK
D103	8-719-928-13	DIODE	SLM13DW
D104	8-719-928-13	DIODE	SLM13DW
D106	8-719-404-35	DIODE	MA141WK
D107	8-719-404-46	DIODE	MA110
D108	8-719-404-35	DIODE	MA141WK
D201	8-719-404-46	DIODE	MA110
D202	8-719-404-46	DIODE	MA110
D203	8-719-400-18	DIODE	MA152WK
D575	8-719-800-76	DIODE	1SS226
D576	8-719-404-46	DIODE	MA110
D801	8-719-820-05	DIODE	1SS181
D802	8-719-404-46	DIODE	MA110
D852	8-719-404-46	DIODE	MA110
D901	8-719-404-46	DIODE	MA110
D902	8-719-820-05	DIODE	1SS181

< FILTER >

FL701	1-236-368-11	FILTER, LOW PASS	
FL702	1-415-634-21	DL (LC)	
FL703	1-236-187-11	FILTER, LOW PASS	
FL704	1-236-190-11	FILTER, LOW PASS	
FL705	1-236-192-11	FILTER, LOW PASS	
FL707	1-415-638-11	DL, LC	
FL708	1-415-635-21	DL (LC)	
FL901	1-236-209-11	FILTER, LOW PASS	

< IC >

IC101	8-759-152-80	IC	uPD7508BGB-522
IC102	8-759-937-56	IC	S-8054ALB-LM-S
IC103	8-759-926-28	IC	SN74HC174ANS
IC201	8-752-009-51	IC	CX20095A
IC202	8-759-504-47	IC	TL026CPS
IC203	8-759-983-69	IC	LM358PS
IC204	8-759-011-65	IC	MC74HC4053F
IC205	8-759-937-56	IC	S-8054ALB-LM-S
IC207	8-759-502-36	IC	S-81350HG
IC575	8-759-983-69	IC	LM358PS
IC576	8-759-234-77	IC	TC4S66F
IC577	8-759-234-77	IC	TC4S66F
IC578	8-759-234-77	IC	TC4S66F
IC702	8-752-034-21	IC	CXA1339R
IC703	8-759-946-00	IC	MB88341PFV
IC704	8-759-300-71	IC	TC4053BF
IC705	8-752-033-34	IC	CXA1072R
IC706	8-759-946-00	IC	MB88341PFV
IC707	8-759-300-71	IC	TC4053BF
IC708	8-759-300-71	IC	TC4053BF
IC709	8-759-300-71	IC	TC4053BF
IC710	8-759-100-93	IC	uPC393G2
IC711	8-759-300-71	IC	TC4053BF
IC712	8-759-100-93	IC	uPC393G2
IC713	8-759-200-67	IC	TC4001BF

Ref. No.	Part No.	Description	Remark
IC714	8-759-300-71	IC TC4053BF	
IC715	8-759-100-93	IC uPC393G2	
IC716	8-759-300-71	IC TC4053BF	
IC717	8-759-300-71	IC TC4053BF	
IC720	8-759-234-77	IC TC4S66F	
IC801	8-759-937-56	IC S-8054ALB-LM-S	
IC802	8-759-037-60	IC MC68HC05N4-SC406667	
IC803	8-759-983-74	IC LM324NS	
IC804	8-759-008-67	IC MC14066BF	
IC851	8-759-500-11	IC MM1036XF	
IC852	8-759-983-69	IC LM358PS	
IC853	8-759-030-35	IC MPC1725M	
IC854	8-759-983-74	IC LM324NS	
IC901	8-752-334-49	IC CXD1172AM	
IC902	8-759-946-00	IC MB88341PFV	
IC903	8-759-940-45	IC S-8054HN-CB	
IC904	8-752-326-18	IC CXD1204R	
IC905	8-759-031-86	IC MC68HC05C4-SC411531	
IC906	8-759-300-71	IC TC4053BF	
IC907	8-759-983-74	IC LM324NS	
IC908	8-759-009-06	IC MC14052BF	
		< JACK >	
J202	1-565-276-21	JACK, ULTRA SMALL 1P	
		< COIL >	
L101	1-410-393-11	INDUCTOR CHIP 100uH	
L201	1-410-388-21	INDUCTOR CHIP 39uH	
L211	1-412-026-11	INDUCTOR CHIP 1uH	
L212	1-412-026-11	INDUCTOR CHIP 1uH	
L241	1-412-032-11	INDUCTOR CHIP 100uH	
L242	1-412-032-11	INDUCTOR CHIP 100uH	
L623	1-410-381-11	INDUCTOR CHIP 10uH	
L701	1-412-031-11	INDUCTOR CHIP 47uH	
L702	1-412-031-11	INDUCTOR CHIP 47uH	
L703	1-410-392-11	INDUCTOR CHIP 82uH	
L704	1-410-369-11	INDUCTOR CHIP 1uH	
L705	1-410-369-11	INDUCTOR CHIP 1uH	
L706	1-410-369-11	INDUCTOR CHIP 1uH	
L707	1-412-031-11	INDUCTOR CHIP 47uH	
L901	1-410-369-11	INDUCTOR CHIP 1uH	
L902	1-410-655-31	INDUCTOR CHIP 120uH	
		< TRANSISTOR >	
Q101	8-729-905-18	TRANSISTOR DTC144EU	
Q102	8-729-907-00	TRANSISTOR DTC114EU	
Q103	8-729-907-00	TRANSISTOR DTC114EU	
Q105	8-729-905-18	TRANSISTOR DTC144EU	

Ref. No.	Part No.	Description	Remark
Q201	8-729-905-35	TRANSISTOR 2SC4081-R	
Q202	8-729-905-35	TRANSISTOR 2SC4081-R	
Q203	8-729-905-35	TRANSISTOR 2SC4081-R	
Q204	8-729-905-35	TRANSISTOR 2SC4081-R	
Q205	8-729-905-35	TRANSISTOR 2SC4081-R	
Q206	8-729-905-35	TRANSISTOR 2SC4081-R	
Q207	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q208	8-729-905-35	TRANSISTOR 2SC4081-R	
Q209	8-729-106-60	TRANSISTOR 2SB1115A	
Q210	8-729-905-35	TRANSISTOR 2SC4081-R	
Q211	8-729-905-23	TRANSISTOR 2SA1576-R	
Q212	8-729-402-84	TRANSISTOR XN4601	
Q213	8-729-905-35	TRANSISTOR 2SC4081-R	
Q214	8-729-905-23	TRANSISTOR 2SA1576-R	
Q215	8-729-905-35	TRANSISTOR 2SC4081-R	
Q216	8-729-905-35	TRANSISTOR 2SC4081-R	
Q574	8-729-905-35	TRANSISTOR 2SC4081-R	
Q575	8-729-905-35	TRANSISTOR 2SC4081-R	
Q576	8-729-905-35	TRANSISTOR 2SC4081-R	
Q577	8-765-420-02	TRANSISTOR 2SK300-3	
Q578	8-729-905-18	TRANSISTOR DTC144EU	
Q579	8-729-905-35	TRANSISTOR 2SC4081-R	
Q580	8-729-402-84	TRANSISTOR XN4601	
Q581	8-729-905-18	TRANSISTOR DTC144EU	
Q582	8-729-905-35	TRANSISTOR 2SC4081-R	
Q702	8-729-905-23	TRANSISTOR 2SA1576-R	
Q703	8-729-905-35	TRANSISTOR 2SC4081-R	
Q704	8-729-905-35	TRANSISTOR 2SC4081-R	
Q705	8-729-905-35	TRANSISTOR 2SC4081-R	
Q706	8-729-402-78	TRANSISTOR XN6401	
Q707	8-729-905-35	TRANSISTOR 2SC4081-R	
Q708	8-729-403-10	TRANSISTOR XN6215	
Q709	8-729-905-35	TRANSISTOR 2SC4081-R	
Q710	8-729-905-35	TRANSISTOR 2SC4081-R	
Q711	8-729-905-35	TRANSISTOR 2SC4081-R	
Q712	8-729-402-84	TRANSISTOR XN4601	
Q713	8-729-402-81	TRANSISTOR XN4501	
Q714	8-729-402-84	TRANSISTOR XN4601	
Q715	8-729-905-35	TRANSISTOR 2SC4081-R	
Q716	8-729-905-18	TRANSISTOR DTC144EU	
Q717	8-729-905-23	TRANSISTOR 2SA1576-R	
Q718	8-729-905-35	TRANSISTOR 2SC4081-R	
Q719	8-729-905-35	TRANSISTOR 2SC4081-R	
Q720	8-729-905-23	TRANSISTOR 2SA1576-R	
Q721	8-729-905-35	TRANSISTOR 2SC4081-R	
Q722	8-729-905-23	TRANSISTOR 2SA1576-R	
Q723	8-729-905-35	TRANSISTOR 2SC4081-R	
Q724	8-729-905-35	TRANSISTOR 2SC4081-R	
Q725	8-729-907-00	TRANSISTOR DTC114EU	

VC-85 MX-7PH

Ref. No.	Part No.	Description		Remark
Q727	8-729-905-23	TRANSISTOR	2SA1576-R	
Q728	8-729-905-18	TRANSISTOR	DTC144EU	
Q801	8-729-403-10	TRANSISTOR	XN6215	
Q802	8-729-403-07	TRANSISTOR	XN1213	
Q803	8-729-905-35	TRANSISTOR	2SC4081-R	
Q804	8-729-805-42	TRANSISTOR	2SC3859	
Q805	8-729-805-42	TRANSISTOR	2SC3859	
Q806	8-729-805-42	TRANSISTOR	2SC3859	
Q807	8-729-402-78	TRANSISTOR	XN6401	
Q851	8-729-403-07	TRANSISTOR	XN1213	
Q852	8-729-905-23	TRANSISTOR	2SA1576-R	
Q853	8-729-402-84	TRANSISTOR	XN4601	
Q854	8-729-106-60	TRANSISTOR	2SB1115A	
Q855	8-729-905-35	TRANSISTOR	2SC4081-R	
Q856	8-729-905-15	TRANSISTOR	DTC144WU	
Q858	8-729-402-84	TRANSISTOR	XN4601	
Q859	8-729-905-18	TRANSISTOR	DTC144EU	
Q860	8-729-905-18	TRANSISTOR	DTC144EU	
Q901	8-729-402-84	TRANSISTOR	XN4601	
Q902	8-729-403-10	TRANSISTOR	XN6215	
Q903	8-729-905-23	TRANSISTOR	2SA1576-R	
Q904	8-729-905-18	TRANSISTOR	DTC144EU	
Q906	8-729-905-35	TRANSISTOR	2SC4081-R	
Q907	8-729-905-35	TRANSISTOR	2SC4081-R	
Q909	8-729-905-35	TRANSISTOR	2SC4081-R	
Q910	8-729-905-35	TRANSISTOR	2SC4081-R	
Q911	8-729-402-19	TRANSISTOR	XN6501	
Q914	8-729-905-18	TRANSISTOR	DTC144EU	
Q915	8-729-905-18	TRANSISTOR	DTC144EU	
Q916	8-729-905-18	TRANSISTOR	DTC144EU	
Q918	8-729-905-18	TRANSISTOR	DTC144EU	
Q919	8-729-905-18	TRANSISTOR	DTC144EU	
Q920	8-729-402-84	TRANSISTOR	XN4601	

< RESISTOR >

Ref. No.	Part No.	Description				Remark
R101	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R102	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R103	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R104	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R105	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R106	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R107	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R108	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R109	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R111	1-216-809-11	METAL CHIP	100	5%	1/16W	
R112	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R113	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R114	1-216-851-11	METAL CHIP	330K	5%	1/16W	
R115	1-216-864-11	METAL CHIP	0	5%	1/16W	
R116	1-216-864-11	METAL CHIP	0	5%	1/16W	
R117	1-216-635-11	METAL CHIP	220	0.5%	1/10W	
R118	1-216-635-11	METAL CHIP	220	0.5%	1/10W	
R121	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R131	1-216-846-11	METAL CHIP	120K	5%	1/16W	
R161	1-216-846-11	METAL CHIP	120K	5%	1/16W	
R201	1-216-813-11	METAL CHIP	220	5%	1/16W	
R202	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R203	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R204	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R205	1-216-817-11	METAL CHIP	470	5%	1/16W	
R206	1-216-818-11	METAL CHIP	560	5%	1/16W	
R207	1-216-817-11	METAL CHIP	470	5%	1/16W	
R208	1-216-813-11	METAL CHIP	220	5%	1/16W	
R209	1-216-816-11	METAL CHIP	390	5%	1/16W	
R210	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R211	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R212	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R213	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	
R214	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R215	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R216	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R217	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R218	1-216-807-11	METAL CHIP	68	5%	1/16W	
R219	1-216-807-11	METAL CHIP	68	5%	1/16W	
R220	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R221	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R222	1-216-822-11	METAL CHIP	1.2K	5%	1/16W	
R223	1-216-817-11	METAL CHIP	470	5%	1/16W	
R224	1-216-822-11	METAL CHIP	1.2K	5%	1/16W	
R225	1-216-815-11	METAL CHIP	330	5%	1/16W	
R226	1-216-807-11	METAL CHIP	68	5%	1/16W	
R227	1-216-820-11	METAL CHIP	820	5%	1/16W	
R228	1-216-836-11	METAL CHIP	18K	5%	1/16W	
R229	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R230	1-216-791-11	METAL CHIP	3.3	5%	1/16W	
R231	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R232	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R233	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R234	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R235	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R236	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R237	1-216-824-11	METAL CHIP	1.8K	5%	1/16W	
R238	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R239	1-216-817-11	METAL CHIP	470	5%	1/16W	
R240	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R241	1-216-821-11	METAL CHIP	1K	5%	1/16W	

Ref. No.	Part No.	Description			Remark
R242	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R243	1-216-812-11	METAL CHIP	180	5%	1/16W
R245	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R246	1-216-819-11	METAL CHIP	680	5%	1/16W
R247	1-216-817-11	METAL CHIP	470	5%	1/16W
R248	1-216-812-11	METAL CHIP	180	5%	1/16W
R249	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R250	1-216-839-11	METAL CHIP	33K	5%	1/16W
R251	1-216-837-11	METAL CHIP	22K	5%	1/16W
R252	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R253	1-216-821-11	METAL CHIP	1K	5%	1/16W
R254	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R255	1-216-833-11	METAL CHIP	10K	5%	1/16W
R256	1-216-821-11	METAL CHIP	1K	5%	1/16W
R257	1-216-817-11	METAL CHIP	470	5%	1/16W
R258	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R261	1-216-837-11	METAL CHIP	22K	5%	1/16W
R262	1-216-839-11	METAL CHIP	33K	5%	1/16W
R263	1-216-817-11	METAL CHIP	470	5%	1/16W
R264	1-216-817-11	METAL CHIP	470	5%	1/16W
R265	1-216-817-11	METAL CHIP	470	5%	1/16W
R281	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R282	1-216-819-11	METAL CHIP	680	5%	1/16W
R283	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R284	1-216-864-11	METAL CHIP	0	5%	1/16W
R285	1-216-815-11	METAL CHIP	330	5%	1/16W
R286	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R287	1-216-865-11	METAL CHIP	3K	5%	1/16W
R507	1-216-834-11	METAL CHIP	12K	5%	1/16W
R508	1-216-834-11	METAL CHIP	12K	5%	1/16W
R509	1-216-661-11	METAL CHIP	2.7K	0.5%	1/10W
R510	1-216-647-11	METAL CHIP	680	0.5%	1/10W
R511	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R512	1-216-854-11	METAL CHIP	560K	5%	1/16W
R513	1-216-833-11	METAL CHIP	10K	5%	1/16W
R514	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R515	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R516	1-216-833-11	METAL CHIP	10K	5%	1/16W
R517	1-216-854-11	METAL CHIP	560K	5%	1/16W
R518	1-216-665-11	METAL CHIP	3.9K	0.5%	1/10W
R519	1-216-647-11	METAL CHIP	680	0.5%	1/10W
R520	1-216-647-11	METAL CHIP	680	0.5%	1/10W
R521	1-216-659-11	METAL CHIP	2.2K	0.5%	1/10W
R522	1-216-649-11	METAL CHIP	820	0.5%	1/10W
R523	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W
R524	1-216-854-11	METAL CHIP	560K	5%	1/16W
R525	1-216-833-11	METAL CHIP	10K	5%	1/16W
R526	1-216-833-11	METAL CHIP	10K	5%	1/16W
R527	1-216-854-11	METAL CHIP	560K	5%	1/16W

Ref. No.	Part No.	Description			Remark
R528	1-216-665-11	METAL CHIP	3.9K	0.5%	1/10W
R529	1-216-645-11	METAL CHIP	560	0.5%	1/10W
R530	1-216-649-11	METAL CHIP	820	0.5%	1/10W
R531	1-216-665-11	METAL CHIP	3.9K	0.5%	1/10W
R532	1-216-645-11	METAL CHIP	560	0.5%	1/10W
R533	1-216-649-11	METAL CHIP	820	0.5%	1/10W
R534	1-216-854-11	METAL CHIP	560K	5%	1/16W
R535	1-216-833-11	METAL CHIP	10K	5%	1/16W
R536	1-216-833-11	METAL CHIP	10K	5%	1/16W
R537	1-216-854-11	METAL CHIP	560K	5%	1/16W
R538	1-216-661-11	METAL CHIP	2.7K	0.5%	1/10W
R539	1-216-635-11	METAL CHIP	220	0.5%	1/10W
R540	1-216-655-11	METAL CHIP	1.5K	0.5%	1/10W
R541	1-216-837-11	METAL CHIP	22K	5%	1/16W
R543	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R544	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R545	1-216-837-11	METAL CHIP	22K	5%	1/16W
R546	1-216-839-11	METAL CHIP	33K	5%	1/16W
R547	1-216-821-11	METAL CHIP	1K	5%	1/16W
R548	1-216-821-11	METAL CHIP	1K	5%	1/16W
R549	1-216-864-11	METAL CHIP	0	5%	1/16W
R551	1-216-833-11	METAL CHIP	10K	5%	1/16W
R552	1-216-833-11	METAL CHIP	10K	5%	1/16W
R553	1-216-833-11	METAL CHIP	10K	5%	1/16W
R561	1-216-845-11	METAL CHIP	100K	5%	1/16W
R571	1-216-841-11	METAL CHIP	47K	5%	1/16W
R573	1-216-817-11	METAL CHIP	470	5%	1/16W
R574	1-216-821-11	METAL CHIP	1K	5%	1/16W
R575	1-216-813-11	METAL CHIP	220	5%	1/16W
R576	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R577	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R578	1-216-815-11	METAL CHIP	330	5%	1/16W
R579	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R580	1-216-821-11	METAL CHIP	1K	5%	1/16W
R581	1-216-857-11	METAL CHIP	1M	5%	1/16W
R582	1-216-842-11	METAL CHIP	56K	5%	1/16W
R583	1-216-857-11	METAL CHIP	1M	5%	1/16W
R584	1-216-857-11	METAL CHIP	1M	5%	1/16W
R585	1-216-845-11	METAL CHIP	100K	5%	1/16W
R586	1-216-833-11	METAL CHIP	10K	5%	1/16W
R587	1-216-833-11	METAL CHIP	10K	5%	1/16W
R588	1-216-845-11	METAL CHIP	100K	5%	1/16W
R589	1-216-834-11	METAL CHIP	12K	5%	1/16W
R590	1-216-842-11	METAL CHIP	56K	5%	1/16W
R591	1-216-835-11	METAL CHIP	15K	5%	1/16W
R592	1-216-856-11	METAL CHIP	820K	5%	1/16W
R593	1-216-857-11	METAL CHIP	1M	5%	1/16W
R594	1-216-845-11	METAL CHIP	100K	5%	1/16W
R595	1-216-825-11	METAL CHIP	2.2K	5%	1/16W

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Ref. No.	Part No.	Description				Remark
R596	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R597	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	
R598	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R599	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R607	1-216-832-11	METAL CHIP	8.2K	5%	1/16W	
R608	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R609	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R612	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R613	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R614	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R615	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
R616	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R668	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R705	1-216-836-11	METAL CHIP	18K	5%	1/16W	
R706	1-216-835-11	METAL CHIP	15K	5%	1/16W	
R707	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R708	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R710	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R711	1-216-835-11	METAL CHIP	15K	5%	1/16W	
R714	1-216-864-11	METAL CHIP	0	5%	1/16W	
R715	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R716	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R717	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R718	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R719	1-216-832-11	METAL CHIP	8.2K	5%	1/16W	
R720	1-216-822-11	METAL CHIP	1.2K	5%	1/16W	
R721	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R722	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R723	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R724	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R725	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
R726	1-216-864-11	METAL CHIP	0	5%	1/16W	
R728	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R729	1-216-835-11	METAL CHIP	15K	5%	1/16W	
R730	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R731	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R732	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R733	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R734	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	
R735	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R736	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R737	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R738	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R739	1-216-820-11	METAL CHIP	820	5%	1/16W	
R740	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R741	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R742	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R743	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R745	1-216-830-11	METAL CHIP	5.6K	5%	1/16W	
R746	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	
R747	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R748	1-216-134-00	METAL CHIP	2.2	5%	1/8W	
R749	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R750	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R751	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R752	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R753	1-216-864-11	METAL CHIP	0	5%	1/16W	
R754	1-216-836-11	METAL CHIP	18K	5%	1/16W	
R755	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R756	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R757	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R758	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R759	1-216-836-11	METAL CHIP	18K	5%	1/16W	
R761	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R762	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R763	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R764	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R765	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R766	1-216-812-11	METAL CHIP	180	5%	1/16W	
R767	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R768	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R770	1-216-835-11	METAL CHIP	15K	5%	1/16W	
R771	1-216-864-11	METAL CHIP	0	5%	1/16W	
R772	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R773	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R775	1-216-836-11	METAL CHIP	18K	5%	1/16W	
R776	1-216-816-11	METAL CHIP	390	5%	1/16W	
R778	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
R779	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R780	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R781	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R782	1-216-818-11	METAL CHIP	560	5%	1/16W	
R783	1-216-817-11	METAL CHIP	470	5%	1/16W	
R784	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R785	1-216-817-11	METAL CHIP	470	5%	1/16W	
R786	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	
R787	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R788	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R789	1-216-836-11	METAL CHIP	18K	5%	1/16W	
R790	1-216-835-11	METAL CHIP	15K	5%	1/16W	
R791	1-216-817-11	METAL CHIP	470	5%	1/16W	
R792	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R793	1-216-817-11	METAL CHIP	470	5%	1/16W	
R794	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	
R796	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R797	1-216-864-11	METAL CHIP	0	5%	1/16W	
R798	1-216-833-11	METAL CHIP	10K	5%	1/16W	

Ref. No.	Part No.	Description			Remark
R799	1-216-833-11	METAL CHIP	10K	5%	1/16W
R801	1-216-833-11	METAL CHIP	10K	5%	1/16W
R802	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R803	1-216-833-11	METAL CHIP	10K	5%	1/16W
R804	1-216-833-11	METAL CHIP	10K	5%	1/16W
R805	1-216-833-11	METAL CHIP	10K	5%	1/16W
R806	1-216-833-11	METAL CHIP	10K	5%	1/16W
R808	1-216-841-11	METAL CHIP	47K	5%	1/16W
R809	1-216-857-11	METAL CHIP	1M	5%	1/16W
R810	1-216-833-11	METAL CHIP	10K	5%	1/16W
R811	1-216-821-11	METAL CHIP	1K	5%	1/16W
R812	1-216-840-11	METAL CHIP	39K	5%	1/16W
R813	1-216-833-11	METAL CHIP	10K	5%	1/16W
R815	1-216-845-11	METAL CHIP	100K	5%	1/16W
R816	1-216-833-11	METAL CHIP	10K	5%	1/16W
R817	1-216-845-11	METAL CHIP	100K	5%	1/16W
R818	1-216-845-11	METAL CHIP	100K	5%	1/16W
R819	1-216-845-11	METAL CHIP	100K	5%	1/16W
R820	1-216-833-11	METAL CHIP	10K	5%	1/16W
R821	1-216-833-11	METAL CHIP	10K	5%	1/16W
R822	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R823	1-216-837-11	METAL CHIP	22K	5%	1/16W
R824	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R825	1-216-823-11	METAL CHIP	1.5K	5%	1/16W
R826	1-216-833-11	METAL CHIP	10K	5%	1/16W
R827	1-216-845-11	METAL CHIP	100K	5%	1/16W
R828	1-216-833-11	METAL CHIP	10K	5%	1/16W
R831	1-216-864-11	METAL CHIP	0	5%	1/16W
R833	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R834	1-216-864-11	METAL CHIP	0	5%	1/16W
R835	1-216-837-11	METAL CHIP	22K	5%	1/16W
R836	1-216-837-11	METAL CHIP	22K	5%	1/16W
R837	1-216-833-11	METAL CHIP	10K	5%	1/16W
R844	1-216-817-11	METAL CHIP	470	5%	1/16W
R845	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R851	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R852	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R853	1-216-833-11	METAL CHIP	10K	5%	1/16W
R854	1-216-840-11	METAL CHIP	39K	5%	1/16W
R855	1-216-864-11	METAL CHIP	0	5%	1/16W
R856	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R857	1-216-835-11	METAL CHIP	15K	5%	1/16W
R859	1-216-134-00	METAL CHIP	2.2	5%	1/8W
R861	1-216-833-11	METAL CHIP	10K	5%	1/16W
R862	1-216-821-11	METAL CHIP	1K	5%	1/16W
R863	1-216-821-11	METAL CHIP	1K	5%	1/16W
R864	1-216-843-11	METAL CHIP	68K	5%	1/16W
R865	1-216-837-11	METAL CHIP	22K	5%	1/16W
R866	1-216-857-11	METAL CHIP	1M	5%	1/16W

Ref. No.	Part No.	Description			Remark
R867	1-216-847-11	METAL CHIP	150K	5%	1/16W
R868	1-216-835-11	METAL CHIP	15K	5%	1/16W
R869	1-216-144-00	METAL CHIP	5.6	5%	1/8W
R872	1-216-857-11	METAL CHIP	1M	5%	1/16W
R873	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R874	1-216-837-11	METAL CHIP	22K	5%	1/16W
R876	1-216-837-11	METAL CHIP	22K	5%	1/16W
R877	1-216-841-11	METAL CHIP	47K	5%	1/16W
R878	1-216-839-11	METAL CHIP	33K	5%	1/16W
R881	1-216-837-11	METAL CHIP	22K	5%	1/16W
R882	1-216-826-11	METAL CHIP	2.7K	5%	1/16W
R883	1-216-840-11	METAL CHIP	39K	5%	1/16W
R884	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R885	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R886	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R887	1-216-833-11	METAL CHIP	10K	5%	1/16W
R888	1-216-833-11	METAL CHIP	10K	5%	1/16W
R889	1-216-838-11	METAL CHIP	27K	5%	1/16W
R890	1-216-840-11	METAL CHIP	39K	5%	1/16W
R891	1-216-815-11	METAL CHIP	330	5%	1/16W
R901	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R902	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R904	1-216-134-00	METAL CHIP	2.2	5%	1/8W
R905	1-216-144-00	METAL CHIP	5.6	5%	1/8W
R906	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R907	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R909	1-216-833-11	METAL CHIP	10K	5%	1/16W
R910	1-216-833-11	METAL CHIP	10K	5%	1/16W
R911	1-216-864-11	METAL CHIP	0	5%	1/16W
R913	1-216-833-11	METAL CHIP	10K	5%	1/16W
R914	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R915	1-216-864-11	METAL CHIP	0	5%	1/16W
R916	1-216-843-11	METAL CHIP	68K	5%	1/16W
R919	1-216-833-11	METAL CHIP	10K	5%	1/16W
R920	1-216-857-11	METAL CHIP	1M	5%	1/16W
R921	1-216-849-11	METAL CHIP	220K	5%	1/16W
R922	1-216-847-11	METAL CHIP	150K	5%	1/16W
R923	1-216-854-11	METAL CHIP	560K	5%	1/16W
R924	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R926	1-216-857-11	METAL CHIP	1M	5%	1/16W
R931	1-216-835-11	METAL CHIP	15K	5%	1/16W
R932	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R933	1-216-845-11	METAL CHIP	100K	5%	1/16W
R934	1-216-845-11	METAL CHIP	100K	5%	1/16W
R935	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R936	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R937	1-216-837-11	METAL CHIP	22K	5%	1/16W
R940	1-216-837-11	METAL CHIP	22K	5%	1/16W
R941	1-216-833-11	METAL CHIP	10K	5%	1/16W

VC-85 MX-7PH POWER BLOCK

Ref. No.	Part No.	Description			Remark
R942	1-216-844-11	METAL CHIP	82K	5%	1/16W
R943	1-216-819-11	METAL CHIP	680	5%	1/16W
R944	1-216-864-11	METAL CHIP	0	5%	1/16W
R945	1-216-818-11	METAL CHIP	560	5%	1/16W
R946	1-216-828-11	METAL CHIP	3.9K	5%	1/16W
R947	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R949	1-216-821-11	METAL CHIP	1K	5%	1/16W
R950	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R952	1-216-845-11	METAL CHIP	100K	5%	1/16W
R953	1-216-837-11	METAL CHIP	22K	5%	1/16W
R954	1-216-820-11	METAL CHIP	820	5%	1/16W
R955	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R956	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R957	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R958	1-216-818-11	METAL CHIP	560	5%	1/16W
R959	1-216-833-11	METAL CHIP	10K	5%	1/16W
R960	1-216-821-11	METAL CHIP	1K	5%	1/16W
R961	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R962	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R963	1-216-827-11	METAL CHIP	3.3K	5%	1/16W
R964	1-216-830-11	METAL CHIP	5.6K	5%	1/16W
R965	1-216-821-11	METAL CHIP	1K	5%	1/16W
R966	1-216-685-11	METAL CHIP	27K	0.5%	1/10W
R967	1-216-675-11	METAL CHIP	10K	0.5%	1/10W
R968	1-216-675-11	METAL CHIP	10K	0.5%	1/10W
R969	1-216-833-11	METAL CHIP	10K	5%	1/16W
R970	1-216-833-11	METAL CHIP	10K	5%	1/16W
R971	1-216-839-11	METAL CHIP	33K	5%	1/16W
R972	1-216-813-11	METAL CHIP	220	5%	1/16W
R973	1-216-813-11	METAL CHIP	220	5%	1/16W
R974	1-216-813-11	METAL CHIP	220	5%	1/16W
R981	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R982	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R987	1-216-833-11	METAL CHIP	10K	5%	1/16W
R988	1-216-837-11	METAL CHIP	22K	5%	1/16W
R989	1-216-837-11	METAL CHIP	22K	5%	1/16W
R993	1-216-833-11	METAL CHIP	10K	5%	1/16W
R994	1-216-833-11	METAL CHIP	10K	5%	1/16W
R995	1-216-833-11	METAL CHIP	10K	5%	1/16W
R996	1-216-837-11	METAL CHIP	22K	5%	1/16W
R997	1-218-295-11	METAL GLAZE	43K	5%	1/16W
R998	1-216-837-11	METAL CHIP	22K	5%	1/16W
R999	1-216-837-11	METAL CHIP	22K	5%	1/16W

< VARIABLE RESISTOR >

RV101	1-238-093-11	RES, ADJ CERMET 100K
RV102	1-237-776-11	RES, VAR, CARBON 10K (COLOUR)
RV104	1-230-661-11	RES, VAR, CARBON 10K (CLOSE/OPEN)
RV509	1-238-092-11	RES, ADJ CERMET 47K
RV510	1-238-092-11	RES, ADJ CERMET 47K
RV511	1-238-092-11	RES, ADJ CERMET 47K
RV512	1-238-092-11	RES, ADJ CERMET 47K
RV851	1-238-093-11	RES, ADJ CERMET 100K

< SWITCH >

S102	1-571-787-11	SWITCH, TACTILE (IRIS MANUAL)
S103	1-571-787-11	SWITCH, TACTILE (WHT BAL HOLD)
S114	1-570-865-11	SWITCH, SLIDE (NEGA/POSI)

< VIBRATOR >

X101	1-527-997-21	VIBRATOR, CRYSTAL (32.768KHz)
X801	1-577-118-11	VIBRATOR, LITHIUM NIOBATE (4MHz)

****

⚠ 1-413-623-21 POWER BLOCK BOARD

****

(Ref. No 9,000 Series)

< CAPACITOR >

C001	⚠ 9-900-653-01	FILM	0.22uF	250V
C002	⚠ 9-998-435-01	CERAMIC	2200PF	125V
C003	⚠ 9-998-435-01	CERAMIC	2200PF	125V
C004	1-161-953-12	CERAMIC	4700PF	125V
C005	⚠ 9-998-433-01	FILM	0.1uF	250V
C006	9-900-655-01	ELECT	47uF	450V
C007	9-900-654-01	FILM	0.01uF	630V
C009	9-998-431-01	FILM	0.0047uF	100V
C010	⚠ 1-161-953-12	CERAMIC	4700PF	125V
C011	⚠ 1-161-953-12	CERAMIC	4700PF	125V
C101	9-998-438-01	ELECT	680uF	16V
C102	9-998-439-01	ELECT	0.47uF	50V
C103	9-998-436-01	CERAMIC	100PF	50V
C104	9-998-440-01	ELECT	330uF	16V
C105	- - -		0.047uF	
C201	9-998-441-01	ELECT	1800uF	10V
C202	9-998-442-01	ELECT	4.7uF	35V
C203	9-998-436-01	CERAMIC	100PF	50V
C204	1-106-206-12	FILM	0.01uF	100V
C205	9-998-443-01	ELECT	1000uF	10V

< CONNECTOR >

CN001	⚠ 9-998-481-01	PIN, CONNECTOR (PC BOARD) 2P (250V, 7A)
CN002	9-998-482-01	PIN, CONNECTOR (PC BOARD) 4P (125V, 1A)
CN003	9-998-483-01	PIN, CONNECTOR (PC BOARD) 3P (125V, 1A)
CN01	9-998-484-01	PIN, CONNECTOR (PC BOARD)
CN02	9-998-484-01	PIN, CONNECTOR (PC BOARD)

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

POWER BLOCK

Ref. No.	Part No.	Description		Remark
		< DIODE >		
D001	⚠ 8-719-510-06	DIODE	SIWB60	
D002	9-998-444-01	DIODE	1SS178	
D101	8-719-948-59	DIODE	ERB93-02	
D102	9-998-446-01	DIODE	RD15ESAB	
D201	8-719-510-37	DIODE	D5LC20U	
D202	9-998-444-01	DIODE	1SS178	
D203	9-998-444-01	DIODE	1SS178	
D204	9-998-444-01	DIODE	1SS178	
D205	9-998-448-01	DIODE	RD6.8ESAB	
D206	9-900-656-01	DIODE	RD15FB2	
		< FUSE >		
F001	⚠ 9-900-661-01	FUSE 250V 1.6A		
		< IC >		
IC001	⚠ 8-749-920-45	IC	MA1050	
IC101	9-998-450-01	IC	NJM431L	
IC201	8-759-135-80	IC	uPC358C	
		< COIL >		
L001	⚠ 9-900-659-01	FILTER, LINE 5mH 0.5A (SU10V-03100)		
L003	9-900-665-01	(B-01-RTF)		
L101	9-998-457-01	CORE, DRUM		
		< PHOTO COUPLER >		
PC001	⚠ 9-900-658-01	PHOTO COUPLER PC111		
		< TRANSISTOR >		
Q201	⚠ 9-998-454-01	TRANSISTOR	2SA1307	
Q202	9-998-455-01	TRANSISTOR	2SC1815	
Q203	9-998-455-01	TRANSISTOR	2SC1815	
		< RESISTOR >		
R001	⚠ 9-900-662-01	CEMENT	4.7	2W
R002	9-900-663-01	METAL OXIDE	150K	2W
R004	9-998-478-01	CARBON	390	1/6W
R005	9-998-478-01	CARBON	390	1/6W
R006	9-998-464-01	CARBON	100	1/6W
R101	9-998-465-01	CARBON	330	1/6W
R102	9-998-465-01	CARBON	330	1/6W
R103	9-998-466-01	CARBON	10K	1/6W
R104	9-998-466-01	CARBON	10K	1/6W
R105	9-998-467-01	CARBON	2.2K	1/6W
R106	9-998-463-01	CARBON	47	1/6W
R107	9-998-468-01	CARBON	1K	1/6W
R201	9-998-468-01	CARBON	1K	1/6W
R202	9-998-471-01	CARBON	22	1/2W
R203	9-998-468-01	CARBON	1K	1/6W
R204	9-998-472-01	CARBON	4.7K	1/6W
R205	9-998-473-01	METAL	15K	1/6W
R206	9-998-468-01	CARBON	1K	1/6W
R207	9-998-472-01	CARBON	4.7K	1/6W
R208	9-998-474-01	CARBON	100K	1/6W
R209	9-998-475-01	CARBON	220	1/6W
R210	9-998-476-01	CEMENT	0.1	2W
R211	9-998-477-01	CARBON	6.8K	1/6W
R212	9-998-475-01	CARBON	220	1/6W
R213	9-998-478-01	CARBON	390	1/6W
R214	9-998-468-01	CARBON	1K	1/6W
R215	9-998-471-01	CARBON	22	1/2W
R216	- - -		10K	
		< THYRISTOR >		
SR101	⚠ 9-998-452-01	THYRISTOR SF3GZ47 (400V, 3A)		
		< TRANSFORMER >		
T001	⚠ 9-900-660-01	TRANSFORMER, CONVERTER (N-T00-516)		
		< VARIABLE RESISTOR >		
VR101	9-998-480-01	RES, ADJ 1K		
VR201	9-998-462-01	RES, ADJ 1K		

****

MISCELLANEOUS

****

53	1-518-679-11	FLUORESCENT TUBE
56	⚠ 1-466-504-21	INVERTER, DC-AC
63	1-466-230-21	CONVERTER UNIT, D/D
64	⚠ 1-555-795-00	CORD, POWER, EULO PLUG
78	1-641-286-11	FP-480 FLEXIBLE BOARD (AEP)
110	1-547-381-12	FILTER BLOCK, OPTICAL
116	1-547-480-11	LENS, ZOOM
IC601	8-752-604-70	IC ICX039AN-1 (CCD IMAGER)
S901-2	⚠ 1-572-810-11	SWITCH, SEESAW (AC POWER)

****

ACCESSORIES & PACKING MATERIALS

****

X-3940-412-1	CARRIER (N) ASSY, FILM
X-3941-134-1	CARRIER ASSY, P (AEP)
1-574-039-11	CORD, CONNECTION
3-752-973-11	MANUAL, INSTRUCTION (ENGLISH)
3-752-973-41	MANUAL, INSTRUCTION (AEP) (DUTCH, SWEDISH, ITALIAN, PORTUGUESE)

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark
	3-752-973-61	MANUAL, INSTRUCTION (E) (CHINESE, ARABIC)	
	3-752-973-71	MANUAL, INSTRUCTION (AEP) (FRENCH, GERMAN, SPANISH)	
*	3-941-787-01	CUSHION (UPPER)	
*	3-941-788-01	CUSHION (LOWER)	
*	3-941-789-21	INDIVIDUAL CARTON	
	3-941-887-01	CARRIER (POSI), FILM	
	3-942-328-11	COVER, DUST	

****

HARDWARE LIST

****

#1	7-685-534-19	SCREW +BTP 2.6X8	TYPE2 N-S
#2	7-621-773-95	SCREW +B 2.6X6	
#3	7-621-770-87	SCREW +P 2.6X5	
#4	7-621-555-10	SCREW +K 2X3	
#5	7-621-255-15	SCREW +P 2X3	
#6	7-685-645-79	SCREW +BTP 3X6	TYPE2 N-S
#7	7-685-104-19	SCREW +P 2X6	TYPE2 NON-SLIT
#8	7-621-281-15	SCREW +P 2X2	
#9	7-621-255-75	SCREW +P 2X12	TYPE2 NON-SLIT
#10	7-621-555-30	SCREW +K 2X5	
#11	7-621-772-50	SCREW +B 2X10	
#12	7-621-775-08	SCREW +P 2.6X3	
#13	7-685-132-19	SCREW +P 2.6X5	TYPE2 NON-SLIT
#14	7-685-133-19	SCREW +P 2.6X6	TYPE2 SLIT
#15	7-685-134-19	SCREW +P 2.6X8	TYPE2 NON-SLIT

****

7. ELECTRICAL ADJUSTMENT

When performing adjustment, refer to the parts arrangement diagram from page 160.

7-1. PREPARATIONS FOR ADJUSTMENT

7-1-1. Servicing tools

- Oscilloscope
- Adjusting screw driver
- Regulated power supply (2 units)
- Color monitor
- Vectorscope
- Digital voltmeter

Ref.	No.	Part Name	Part No.
J-1	ND filter 0.3	J-6080-818-A	Focus adjustment (2 pcs)
	ND filter 1.0	J-6080-808-A	Focus adjustment (2 pcs) Auto focus confirmation
	ND filter 0.4	J-6080-806-A	Positive iris adjustment
	ND filter 0.1	J-6080-807-A	Positive iris adjustment Auto focus confirmation (2 pcs)
J-2	Color bar chart	J-6082-126-A	
	Negative color bar chart	J-6082-127-A	
J-3	Siemens star chart	J-6082-130-A	Focus adjustment, auto focus adjustment
J-4	AF microprocessor data reading tool	J-6082-025-A	
J-5	Adjustment remote controller (RM-95 partly improved)	J-6082-053-A	
J-6	White balance chart (gray)	J-6082-129-A	
	Negative white balance chart (orange)	J-6082-128-A	
J-7	Inmega cycle chart	J-6082-125-A	
J-8	CPA connector jig	J-6082-109-A	Check point array on the VC-85 board

*1 PTB-500 (J-6029-140-A) is also available.

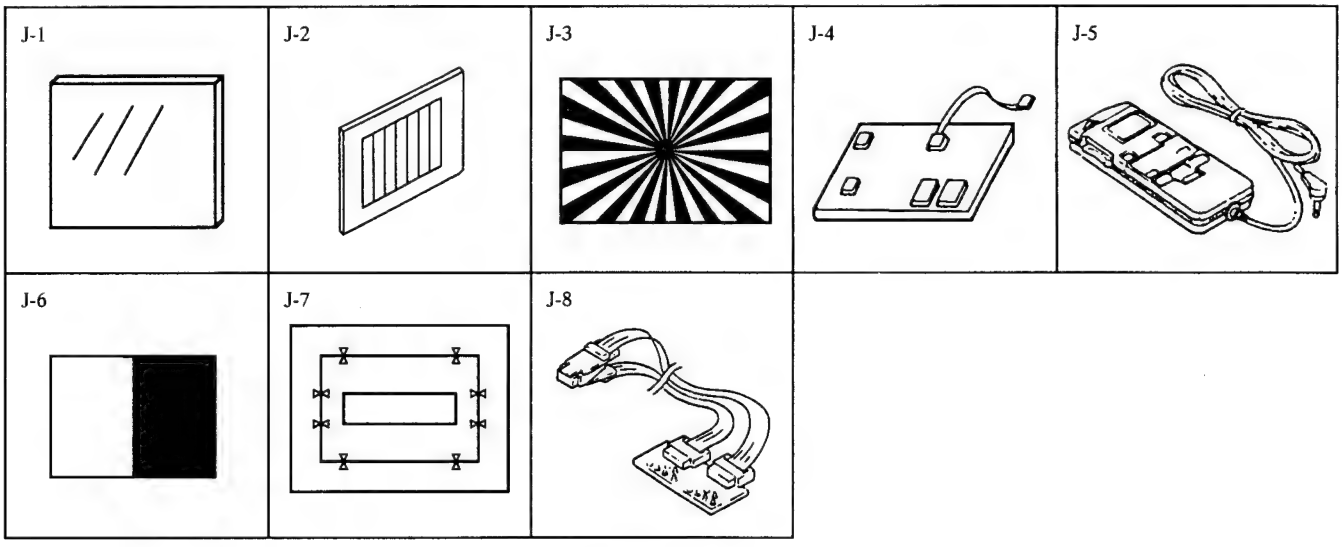


Fig. 7-1.

7-1-2. Preparation

Note: Refer to "2. REMOVAL" for the details of the removal of the cabinet or various boards.

1) Connect the adjusting equipments as shown in Fig. 5-2.

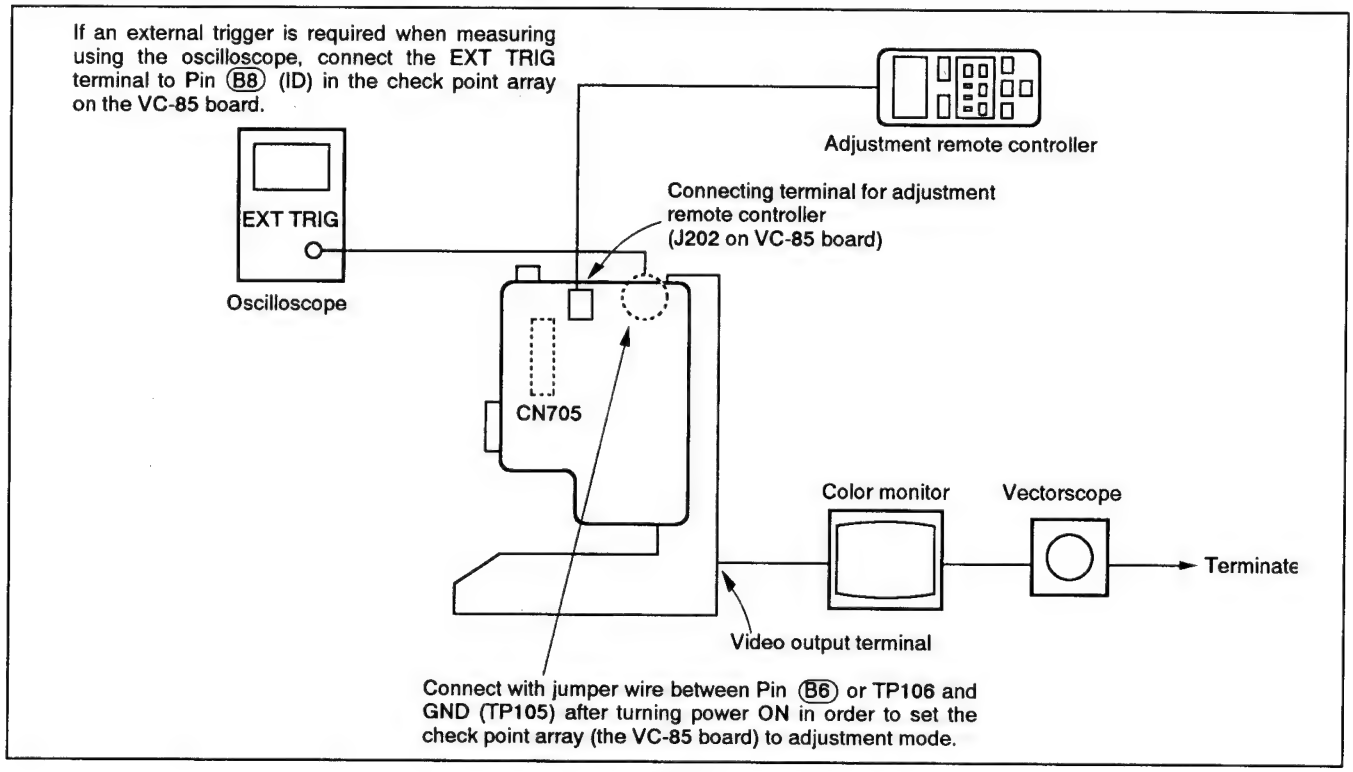


Fig. 7-2.

7-1-3. Precautions

1. Setting of switches

Performing adjustment by setting the switches in the following positions unless otherwise specified.

1. Perform adjustment by setting the adjustment data of the adjustment address 75 (AWB MODE) to 00 unless otherwise specified. Be sure to return the data to F0 after adjustment.
2. "IRIS (CLOSE/OPEN)" control (RV104 on the VC-85 board) ····· center position
3. "COLOUR" control (RV102 on the VC-85 board) ····· center click position
4. "NEGA/POSI" selection (S114 on the VC-85 board) positive
5. "IRIS (PUSH MANUAL)" button (S102 on the VC-85 board) ····· "AUTO" (LED off)
6. "WHT BAL (PUSH HOLD)" button (S103 on the VC-85 board) ····· "AUTO" (LED off)
7. "COLOUR BALANCE (ON/OFF)" button (S115 on the FA-1 board) ····· OFF (LED off)

2. Adjustment order

As a rule, perform adjustments according to the described order.

3. Subject

1) Color bar chart (standard picture frame)
   When performing adjustment using the color bar chart, adjust the picture frame as in the Fig. 7-3. (standard picture frame)
2) White pattern (standard picture frame)
   Remove the color bar chart and adjust with the zoom button so that the white pattern has the same size and position as the color bar chart (standard picture frame).
3) Siemens star chart
   Adjust the chart position so that the centers of the siemens star and monitor screen overlap each other on the monitor display.

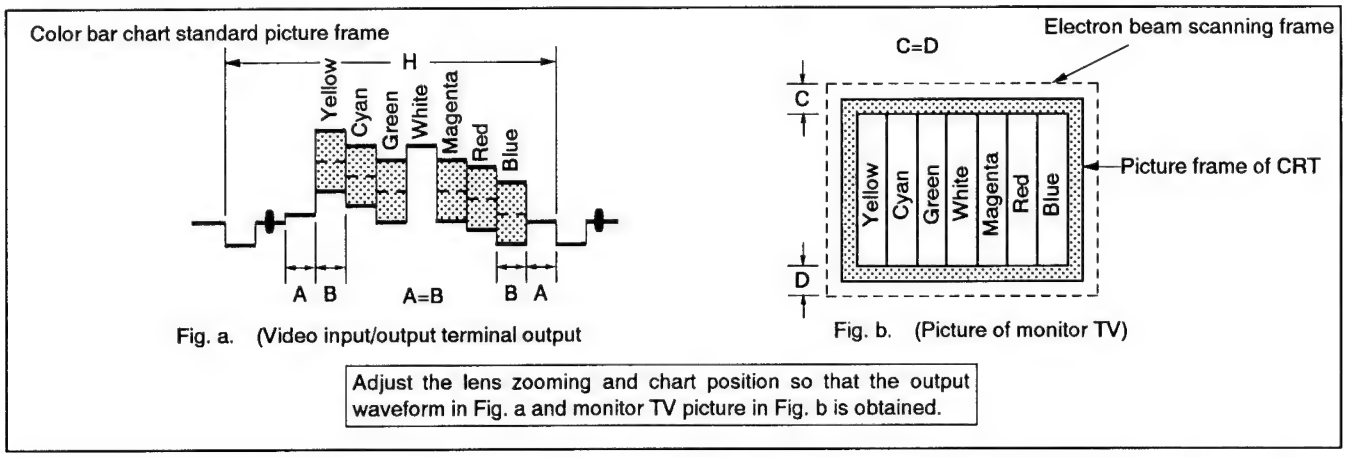


Fig. 7-3.

4) Negative color bar chart (standard picture frame)
   Adjust the picture frame in the same manner as (positive) color bar chart.

Actual colors displayed on the negative color bar chart and colors displayed on the monitor TV are shown in the figure below.

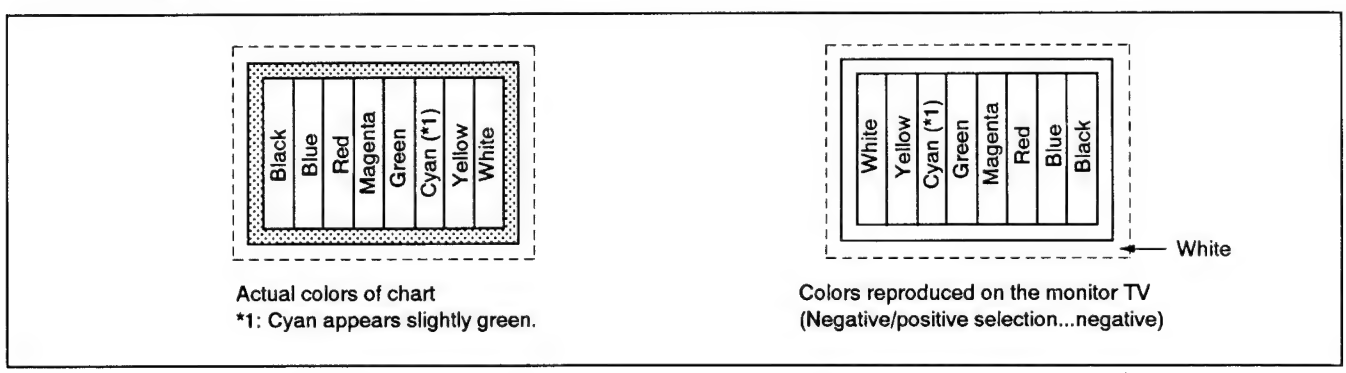


Fig. 7-4.

5) White balance chart (gray) and negative white balance chart (orange) (Standard picture frame)
Move the picture frame to the TELE side until it stops. Set the border line between white/gray and white/orange to the center.

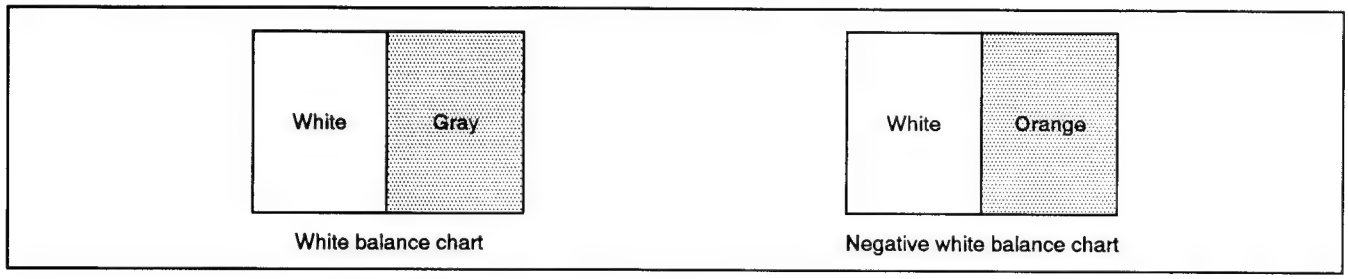


Fig. 7-5.

6) Inmega cycle chart
Set the monitor TV in to under scan condition and adjust the picture frame as in the figure below.

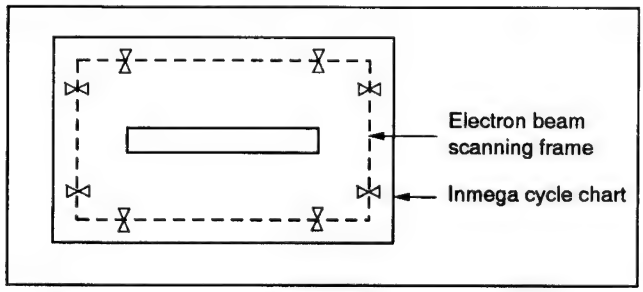


Fig. 7-6.

7-1-4. Adjustment remote controller

The camera block employs EVR (electronic volume) as an adjustment element in place of conventional semi-fixed resistor. The EVR is controlled by EVR/AWB microprocessor (IC802 on VC-85 board). This microprocessor reads out the data written in the non-volatile memory within the microprocessor and sends it to EVR. The EVR makes the data (8-bit per each adjustment point) D/A conversion to generate the adjusting voltage.

It is necessary to change the adjustment data written in the non-volatile memory to adjust the camera block. For this purpose, adjustment remote controller is used.

The adjustment remote controller performs bi-directional communication with the camera block microprocessor using the remote controller signal line (LANC). The adjustment address and adjustment data up/down command are sent from the adjustment remote controller to the camera block microprocessor. The adjustment address and adjustment data are sent from the camera block microprocessor to the adjustment remote controller.

1. Use of adjustment remote controller

1) Connect the adjustment remote controller to the remote terminal (J202 on VC-85 board). (Set the HOLD switch of the adjustment remote controller to the HOLD position:service position.)
2) Turn ON the power of the main unit.
3) Connect with the jumper wire between TP106 or the Pin (B6) ($\overline{\text{CAM ADJ}}$) of the check point array and GND (TP105).
   (This connection stops ordinary remote control operation for EVR/AWB microprocessor and starts exclusive adjustment communication.)
   Note: Be sure to make this connection after turning the power ON. If connection is correct, the display below is shown on the LCD of the adjustment remote controller. (Adjustment data depends on unit.)

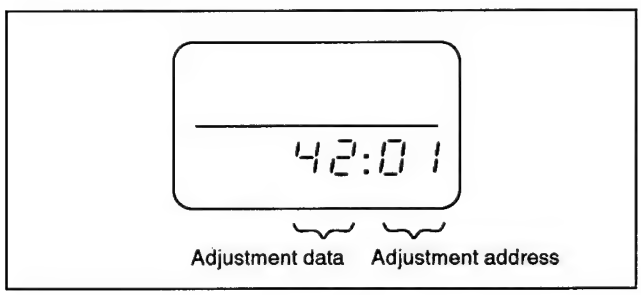


Fig. 7-7.

4) Designate the desired adjustment address using the adjustment remote controller.
   Adjustment address is increased by pressing FF (▶▶) button.
   Adjustment address is decreased by pressing REW (◀◀) button.
   The adjustment address is shown in hexadecimal. There are 117 addresses from 01 to 75. The adjustment addresses correspond to EVR output terminals (IC703, IC706 and IC902 on VC-85 board). Refer to the table 7-3 for the adjustment contents of each address.
5) Perform adjustment by increasing or decreasing the adjustment data.
   Adjustment data is increased by pressing PLAY (▶) button.
   Adjustment data is decreased by pressing STOP (■) button.
   - The adjustment address is shown in hexadecimal. There are 256 values from 00 to FF.

Hexadecimal	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Display on LCD	0	1	2	3	4	5	6	7	8	9	A	b	c	d	E	F
Decimal equivalent	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15

Table 7-1.

   - The adjustment data corresponds to the output voltage of EVR (IC703,IC706 and IC902 on the VC-85 board) and shown below.

Adjustment data ( ) shows decimal equivalent	EVR output voltage
FF (=255)	Maximum value (approx. 5 Vdc)
F0 (=240)	
E0 (=224)	
D0 (=208)	
C0 (=192)	
B0 (=176)	
A0 (=160)	
90 (=144)	
80 (=128)	Center value (approx. 2.5 Vdc)
70 (=112)	
60 (=96)	
50 (=80)	
40 (=64)	
30 (=48)	
20 (=32)	
10 (=16)	
00 (=0)	Minimum value (approx. 0 Vdc)

Table 7-2.

6) To store the adjustment data in the non-volatile memory within EVR/AWB microprocessor (IC802 on VC-85 board), change the adjustment address by FF (▶▶) button or REW (◀◀) button.
   (If this procedure is not performed, a new adjustment data is not stored in the non-volatile memory.)

2. Precautions on use of adjustment remote controller

The correct adjustment data may be erased by mis-operation of the adjustment remote controller. To prevent this, it is recommended to record all the adjustment data and to record a new adjustment data after each step is completed.

Note: Data already described in the recording for adjustment data memo column is fixed data.

Adjustment address	Adjusting voltage output terminal	Adjustment item	Remarks	Adjustment data memo column
01	Pin ⑱ of IC703	DELTA R	White balance adjustment	
02	Pin ⑲ of IC703	DELTA B		
03				00
04	Pin ③ of IC703	C2 GAIN	Chroma signal matrix adjustment (2)	
05	Pin ④ of IC703	NEGA R-Y GAIN	Negative color reproduction adjustment	
06	Pin ⑤ of IC703	NEGA B-Y GAIN		
07	Pin ⑥ of IC703	NEGA R-Y HUE		
08	Pin ⑦ of IC703	NEGA B-Y HUE		
09	Pin ⑧ of IC703	NEGA C γ		D0
0A	Pin ⑨ of IC703	C LEVEL	Chroma level adjustment	
0B	Pin ⑫ of IC703	NEGA R GAIN	Negative pre-white balance adjustment	
0C	Pin ⑬ of IC703	NEGA B GAIN		
0D	Pin ⑱ of IC706	NEGA PED		
0E	Pin ⑲ of IC706	C1 GAIN	Chroma signal matrix adjustment (1)	
0F	Pin ② of IC706	Y1 GAIN	Y signal matrix adjustment	
10	Pin ③ of IC706	WC	White clip adjustment	
11	Pin ④ of IC706	SET UP		
12	Pin ⑤ of IC706	SYNC LEVEL		
13	Pin ⑥ of IC706	YH LEVEL		
14	Pin ⑦ of IC706	APERTURE		
15	Pin ⑧ of IC706	POSI Y LEVEL		
16	Pin ⑨ of IC706	BURST LEVEL		
17	Pin ⑫ of IC706	HUE CONT	Burst phase adjustment	
18	Pin ⑬ of IC706	NEGA Y LEVEL		
19	Pin ⑱ of IC902	POSI IRIS		
1A	Pin ⑲ of IC902	POSI R GAIN	Positive pre-white balance adjustment	
1B	Pin ② of IC902	HALL OFFSET	Hall adjustment	
1C	Pin ③ of IC902	POSI B GAIN	Positive pre-white balance adjustment	
1D	Pin ④ of IC902	PG CONT		
1E	Pin ⑤ of IC902	V SUB		
1F	Pin ⑥ of IC902	NEGA IRIS		
20	Pin ⑦ of IC902	AGC		FF
21	Pin ⑧ of IC902	NEGA Y- γ		70
22	Pin ⑨ of IC902			00
23	Pin ⑫ of IC902			00
24	Pin ⑬ of IC902	MGC		00

Table 7-3. (1)

<table>
<tr><th>Adjustment address</th><th>Adjusting voltage output terminal</th><th>Adjustment item</th><th colspan="3">Remarks</th><th>Adjustment data memo column</th></tr>
<tr><td>25</td><td></td><td>MODE</td><td colspan="3">The following adjustment modes are selected by changing the adjustment data.
<table><tr><th>Adjustment data</th><th>Adjustment mode</th></tr><tr><td>00</td><td>Release</td></tr><tr><td>01</td><td>Focus hunching</td></tr><tr><td>03</td><td>Zoom position</td></tr><tr><td>05</td><td>Hall, iris close</td></tr><tr><td>07</td><td>Hall, iris open</td></tr><tr><td>09</td><td>Iris A/D converted value</td></tr><tr><td>0B</td><td>AGC A/D converted value</td></tr><tr><td>FD</td><td>Auto focus filter fixed at FA.</td></tr><tr><td>FF</td><td>Auto focus filter fixed at FH.</td></tr></table></td><td>00</td></tr>
<tr><td>26</td><td></td><td>LLA</td><td colspan="3">Low illuminance display threshold</td><td>3F</td></tr>
<tr><td>27</td><td></td><td>MACRO</td><td colspan="3">Macro position</td><td>00</td></tr>
<tr><td>28</td><td></td><td>IN/OUT DOOR</td><td colspan="3">Indoor/outdoor discrimination</td><td>00</td></tr>
<tr><td>29</td><td></td><td>STEP A</td><td colspan="3">Number of motor FG for peak searching</td><td>04</td></tr>
<tr><td>2A</td><td></td><td>BASE-H</td><td colspan="3">Low contrast start threshold</td><td>18</td></tr>
<tr><td>2B</td><td></td><td>STILL-THR1</td><td colspan="3">Still area threshold (1)</td><td>04</td></tr>
<tr><td>2C</td><td></td><td>SEARCH-THR</td><td colspan="3">Top check area threshold</td><td>10</td></tr>
<tr><td>2D</td><td></td><td>HALL OUT</td><td colspan="3" rowspan="2">AWB indoor/outdoor discrimination threshold</td><td>14</td></tr>
<tr><td>2E</td><td></td><td>HALL IN</td><td>18</td></tr>
<tr><td>2F</td><td></td><td>TC-COUNTER</td><td colspan="3"></td><td>01</td></tr>
<tr><td>30</td><td></td><td>FH-W</td><td>FH evaluation value at all white</td><td rowspan="4">Auto focus adjustment</td><td></td><td></td></tr>
<tr><td>31</td><td></td><td>FH-B</td><td>FH evaluation value at all black</td><td></td><td></td></tr>
<tr><td>32</td><td></td><td>AGC-W</td><td>AGC A/D converted value at all white</td><td></td><td></td></tr>
<tr><td>33</td><td></td><td>AGC-B</td><td>AGC A/D converted value at all black</td><td></td><td></td></tr>
<tr><td>34</td><td></td><td>BACKRUSH</td><td colspan="3">Backrush compensation amount</td><td>01</td></tr>
<tr><td>35</td><td></td><td>FG-SPEED</td><td colspan="3">Focus speed setting</td><td>02</td></tr>
<tr><td>36</td><td></td><td>STILL-THR2</td><td colspan="3">Still area threshold (2)</td><td>02</td></tr>
<tr><td>37</td><td></td><td>STILL-THR3</td><td colspan="3">Still area threshold (3)</td><td>01</td></tr>
<tr><td>38</td><td></td><td>LC-THR</td><td colspan="3">Threshold at low contrast</td><td>10</td></tr>
<tr><td>39</td><td></td><td>R32MSB</td><td colspan="3" rowspan="6">Preset data
(The data in the column are automatically input when adjusting auto white balance.)</td><td></td></tr>
<tr><td>3A</td><td></td><td>R32LSB</td><td></td></tr>
<tr><td>3B</td><td></td><td>B32MSB</td><td></td></tr>
<tr><td>3C</td><td></td><td>B32LSB</td><td></td></tr>
<tr><td>3D</td><td></td><td>G32MSB</td><td></td></tr>
<tr><td>3E</td><td></td><td>G32LSB</td><td></td></tr>
<tr><td>3F</td><td></td><td>START R</td><td rowspan="2">R CONT and B CONT data at auto white balance operation starting</td><td rowspan="6">Auto white balance fixed data</td><td>26</td></tr>
<tr><td>40</td><td></td><td>START B</td><td>51</td></tr>
<tr><td>41</td><td></td><td>TM DIVID</td><td>Border value of the tracking frame</td><td>44</td></tr>
<tr><td>42</td><td></td><td>BM DIVID</td><td>Border value of the tracking frame</td><td>28</td></tr>
<tr><td>43</td><td></td><td>TOP SLP R</td><td>R CONT coefficient of the upper step of the tracking frame</td><td>80</td></tr>
<tr><td>44</td><td></td><td>TOP SLP B</td><td>B CONT coefficient of the upper step of the tracking frame
Auto white</td><td>20</td></tr>
</table>

Table 7-3. (2)

Adjustment address	Adjusting voltage output terminal	Adjustment item	Remarks		Adjustment data memo column
45		MDL SLP R	R CONT and B CONT coefficient of the middle step of the tracking frame	Auto white balance fixed data	40
46		MDL SLP B			40
47		BTM SLP R			20
48		BTM SLP B			40
49		KIKO R			80
4A		KIKO B			30
4B		TOP UP	Upper and lower limit frames of the upper step of the tracking frame		85
4C		TOP DWN			67
4D		MDL UP	Upper and lower limit frames of the upper, middle and lower steps of the tracking frame		70
4E		MDL DWN			6B
4F		BTM UP			52
50		BTM DWN			3C
51		KEIKO DWN			7F
52		R DWN LMT	R CONT data upper and lower limit of the tracking frame		23
53		R UP LMT			64
54		B UP LMT	B CONT data upper limit of the tracking frame		7A 55
55		IN BTOP			46
56		IN BMAX	INDOOR operation frame upper limit of the tracking frame INDOOR mode		46
57		OUT BMIN	B CONT data upper limit		3A
58		OUT BTM	OUTDOOR mode B CONT data lower limit		1C
59		B DWN LMT	OUTDOOR mode operation frame lower limit frame of the tracking frame		25 55 20
5A		R OUTDOOR	B CONT data lower limit of the tracking frame		26
5B		B OUTDOOR			34
5C		Ra	White balance preset data R CONT and B CONT data of the points a, b and c on the curve of blackbody radiation		65
5D		Rb			51
5E		Rc			3D
5F		Ba			13
60		Bb			2D
61		Bc			3B
62		R/B TOP	Incline data of the curve of blackbody radiation		35
63		R/B MDL			16
64		R/B DWN			11
65		B/R TOP			90
66		B/R MDL			08
67		B/R DWN			
68		KEIKO	Indoor AWB data		
69		LL LMT	Minimum tracking illuminance		

Table 7-3. (3)

<table>
<tr><th>Adjustment address</th><th>Adjusting voltage output terminal</th><th>Adjustment item</th><th colspan="2">Remarks</th><th>Adjustment data memo column</th></tr>
<tr><td>6A</td><td></td><td>B HUE KEI</td><td rowspan="5">Variable linear matrix data</td><td rowspan="7">Auto white balance fixed data</td><td>18</td></tr>
<tr><td>6B</td><td></td><td>R GAIN OFF</td><td>30</td></tr>
<tr><td>6C</td><td></td><td>R GAIN KEI</td><td>20</td></tr>
<tr><td>6D</td><td></td><td>R HUE OFF</td><td>37</td></tr>
<tr><td>6E</td><td></td><td>R HUE KEI</td><td>1E</td></tr>
<tr><td>6F</td><td></td><td>DELAY TM</td><td colspan="2">Tracking speed</td><td>10</td></tr>
<tr><td>70</td><td></td><td>FAST TM</td><td colspan="2">Initial high speed tracking times</td><td>30</td></tr>
<tr><td>71</td><td></td><td>CAM DDS O</td><td colspan="3" rowspan="4">Fixed data</td><td>00</td></tr>
<tr><td>72</td><td></td><td>MODE</td><td>09</td></tr>
<tr><td>73</td><td></td><td>DSP MODE</td><td>00</td></tr>
<tr><td>74</td><td></td><td>CAM ALN</td><td>00</td></tr>
<tr><td>75</td><td></td><td>AWB MODE</td><td colspan="3">The following auto white balance adjustment modes are selected by changing the adjustment data.
<table><tr><th>Adjustment data</th><th>Adjustment mode</th></tr><tr><td>00</td><td>Setting at adjustment</td></tr><tr><td>10
E0</td><td>Auto white balance adjustment mode</td></tr><tr><td>F0</td><td>3200K preset data read mode</td></tr><tr><td></td><td>Auto white balance tracking zone discrimination invalid, all area discrimination mode and setting at shipping</td></tr></table></td><td>F0</td></tr>
</table>

Table 7-3. (4)

7-1-5. Check Point Array

Most of measurement points for camera block adjustment are placed on the check point array on the VC-85 board. Solder short lead wires to terminals necessary for adjusting and connect oscilloscope, etc. The terminal numbers and signal names are shown in the Table 7-4.

Note: The CPA connector jig (J-6082-109-A) allows you to connect an oscilloscope easily.

Terminal No.	Signal name	Terminal No.	Signal name
A1	G OUT	B1	$\overline{\text{WB ADJ}}$
A2	PG CONT	B2	N.C
A3	N.C	B3	Y(LPF)OUT
A4	Y0	B4	V SUB
A5	Y1	B5	AW ADJ
A6	C0	B6	$\overline{\text{CAM ADJ}}$
A7	C1	B7	MODE
A8	CAM Y	B8	ID
A9	YH	B9	N.C
A10	N.C	B10	GND
A11	N.C	B11	CCD OUT

※ N.C...no connection

Table 7-4.

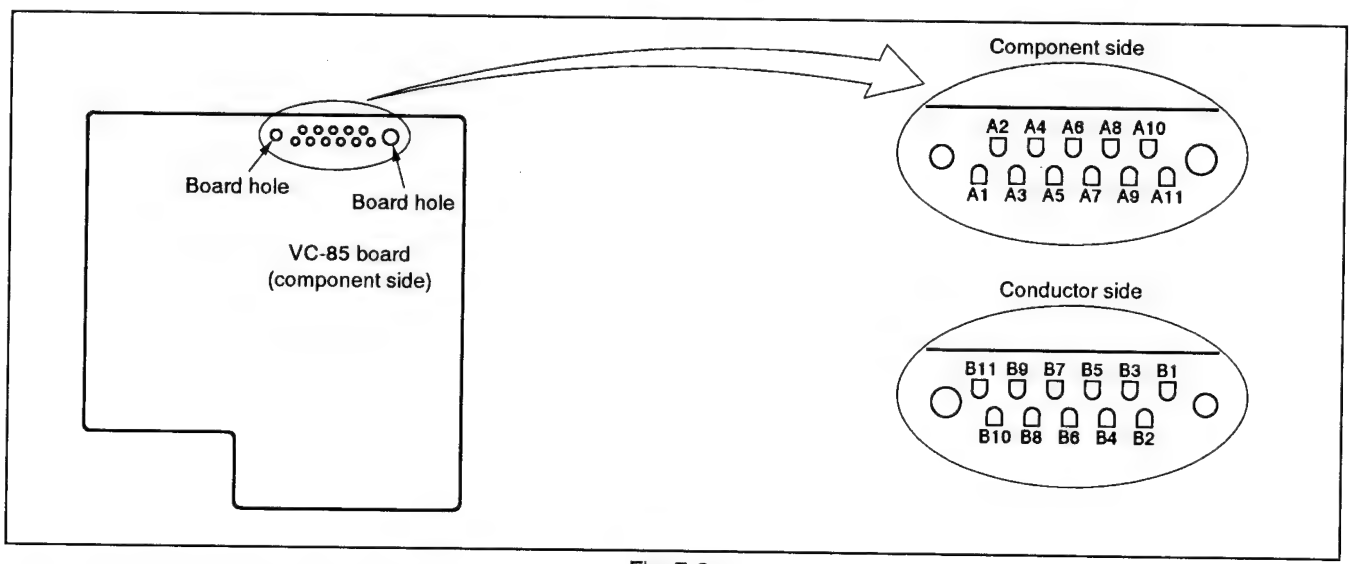


Fig. 7-8.

7-1-6. AF Microprocessor Data Reading Tool

The AF microprocessor data reading tool converts the serial data (output data varies according to hall (iris) state, focus state, focus motor speed, zoom ring position, etc.) for adjustment output from the AF microprocessor (IC905 on VC-85 board) into a 2-digit hexadecimal code and displays it on the LED.

Connection

Connect as follows.

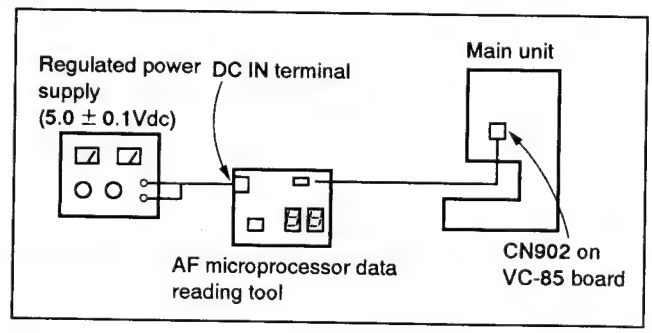


Fig. 7-9.

7-1-7. Data Processing

Some adjustment items require calculation from the data (hexadecimal) indicated on the reading tool for AF microprocessor adjustment remote controller to obtain the adjustment data. In this case, convert hexadecimal values into decimal and perform calculation, then convert the result into hexadecimal to make adjustment data. Hexadecimal to decimal conversion table is shown in the table 7-5.

Hexadecimal to decimal conversion table

Hexadecimal upper digit \ Hexadecimal lower digit	0	1	2	3	4	5	6	7	8	9	A (R)	B (b)	C (c)	D (d)	E (E)	F (F)
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
2	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47
3	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63
4	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79
5	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95
6	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111
7	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127
8	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143
9	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159
A (R)	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175
B (b)	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191
C (c)	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207
D (d)	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223
E (E)	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239
F (F)	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255

① → B (b) row

② ↓ D (d) column

Note: ( ) is the indication on the tool or adjustment remote controller

Example: Indication on the tool or adjustment remote controller is BD (b d).
Upper digit is B (b) and lower digit is D (d) in hexadecimal, so "189" in decimal value is obtained from the intersection of ① and ② in the above table.

Table 7-5.

7-2. FOCUS ADJUSTMENT

Subject	Siemens star
Filter	ND filter 1.0 (2 pcs) and 0.3 (2 pcs)
Measurement Point	Monitor TV
Measuring Equipment	
Adjustment Element	Front lens ring

Adjusting method:

1) Connect a jumper wire between TP151 on the FA-1 board and GND (frame).
2) Attach ND filter 2.6 (1.0+1.0+0.3+0.3) to the lens.
3) Press the zoom W button (S111 on FA-1 board) to set WIDE end.
4) Press the focus push auto (S101 on FA-1 board) and release it when focus is matched.
5) Press the zoom T button (S112 on FA-1 board) to set TELE end.
6) Rotate the front lens ring and adjust the focus.
7) Repeat steps 3) to 6), fix the front lens ring so that focus is matched on both WIDE end and TELE end. (Fix with adhesive tape.)
8) Disconnect a jumper wire between TP151 on FA-1 board and GND (frame).

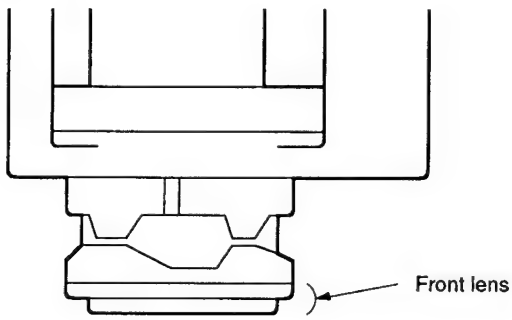


Fig. 7-10.

7-3. ELECTRICAL ADJUSTMENT

7-3-1. Power Supply Check

1. Power source block check (power source block)

Measuring Equipment	Digital voltmeter
6V Check	
Measurement Point	Pin ① of CN3 and Pin ① of CN203 on VC-85 board
Specified Value	6.0 ± 0.5 Vdc
12 V Check	
Measurement Point	Pin ① of CN2
Specified Value	12.0 ± 0.5 Vdc

Checking method:

1) Each power supply voltage should meet the specified value.

2. DC-DC converter check (VC-85 board)

Measuring Equipment	Digital voltmeter
CAM 5V Check	
Measurement Point	Pin ④ of CN701
Specified Value	4.9 ± 0.5 Vdc
5V Check	
Measurement Point	Pin ③ of CN702
Specified Value	4.9 ± 0.5 Vdc
15V Check	
Measurement Point	Pin ① of CN7022
Specified Value	15.0 ± 0.5 Vdc
–9V Check	
Measurement Point	Pin ② of CN702
Specified Value	–9.0 ± 0.5 Vdc

Checking method:

1) Each power voltage should meet the specified value.

7-3-2. DDS Microprocessor System Clock Adjustment (VC-85 Board)

Measurement Point	TP101 (Pin ⑱ of IC101)
Measuring Equipment	Frequency counter (Note)
Adjustment Element	RV101
Specified Value	330 ± 5 kHz

Note: Use a probe of low capacity (10 PF or less) and high resistance (1 MΩ).

Connection:

1) Connect with a jumper wire between TP102 (Pin ㉘ of IC101) and GND.

Adjusting method:

1) Adjust with RV101 for 330 ± 5 kHz.

7-3-3. DDS Microprocessor Clock Check (VC-85 board)

Measurement Point	TP103 (Pin ㊶ of IC101)
Measuring Equipment	Frequency counter
Specified Value	8.192 ± 0.001 kHz

Connection:

1) Connect with a jumper wire between TP102 (Pin ㉘ of IC101) and GND.

Checking method:

1) Oscillation frequency should meet the specified value.

7-3-4. PLL Adjustment (GE-10 Board)

Object	Optional
Measurement Point	CL664 (See Fig. 7-11) or Pin ⑳ of IC621
Measuring Equipment	Digital voltmeter
Adjustment Element	CT621
Specified Value	2.5 ± 0.2 Vdc

Adjustment method:

1) Adjust to 2.5 ± 0.2 Vdc with CT621.

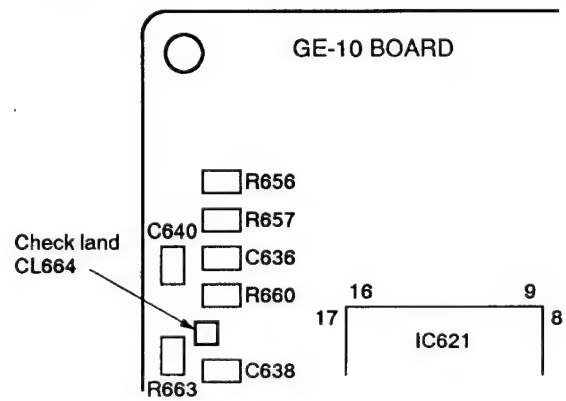


Fig. 7-11.

7-3-5. EVR Initial Settings

Set the adjustment data of the adjustment address 75 to 00. With other adjustment addresses, set the adjustment data to the initial value only when EVR/AWB microprocessor (IC802 on VC-85 board) was replaced.

Be sure to return the adjustment data of the adjustment address 75 to F0 after adjustment is completed.

Adjusting method:

1) Set the adjustment data of each adjustment address to the initial value by the adjustment remote controller.
2) Change the adjustment address to store the last adjustment data in the memory.

Adjustment address	Adjustment data initial value	Adjustment address	Adjustment data initial value	Adjustment address	Adjustment data initial value
01 (DELTA R)	50	26 (LLA)	3F	51 (KEIKO DWN)	7F
02 (DELTA B)	50	27 (MACRO)	00	52 (R DWN LMT)	23
03	00	28 (IN/OUT DOOR)	00	53 (R TOP LMT)	64
04 (C2 GAIN)	C0	29 (STEP A)	04	54 (B UP LMT)	7A
05 (NEGA R-Y GAIN)	E0	2A (BASE-H)	18	55 (IN B TOP)	55
06 (NEGA B-Y GAIN)	CA	2B (STILL-THR1)	04	56 (IN B MAX)	46
07 (NEGA R-Y HUE)	C3	2C (SEARCH-THR)	10	57 (OUT B MAX)	46
08 (NEGA B-Y HUE)	CB	2D (HALL OUT)	14	58 (OUT B DWN)	3A
09 (NEGA C- γ)	D0	2E (HALL IN)	18	59 (B DWN LMT)	1C
0A (C LEVEL)	B6	2F (TC-COUNTER)	01	5A (R OUTDOOR)	25
0B (NEGA R GAIN)	83	30 (FH-W)	00	5B (B OUTDOOR)	55
0C (NEGA B GAIN)	7F	31 (FH-B)	00	5C (Ra)	20
0D (NEGA PED)	89	32 (AGC-W)	00	5D (Rb)	26
0E (C1 GAIN)	C0	33 (AGC-B)	00	5E (Rc)	34
0F (Y1 GAIN)	C0	34 (BACKRUSH)	01	5F (Ba)	65
10 (WC)	A8	35 (FG-SPEED)	02	60 (Bb)	51
11 (SET UP)	90	36 (STILL-THR2)	02	61 (Bc)	3D
12 (SYNC LEVEL)	90	37 (STILL-THR3)	01	62 (R/B TOP)	13
13 (YH LEVEL)	D0	38 (LC-THR)	10	63 (R/B MDL)	2D
14 (APERTURE)	90	3F (START R)	26	64 (R/B DWN)	3B
15 (POSI Y LEVEL)	95	40 (START B)	51	65 (B/R TOP)	35
16 (BURST LEVEL)	A0	41 (TM DIVID)	44	66 (B/R MDL)	16
17 (HUE CONT)	AE	42 (BM DIVID)	28	67 (B/R DWN)	11
18 (NEGA Y LEVEL)	C3	43 (TOP SLP R)	80	68 (KEIKO)	90
19 (POSI IRIS)	80	44 (TOP SLP B)	20	69 (LL LMT)	08
1A (POSI R GAIN)	80	45 (MDL SLP R)	40	6A (B HUE KEI)	18
1B (HALL OFFSET)	2E	46 (MDL SLP B)	40	6B (R GAIN OFF)	30
1C (POSI B GAIN)	7E	47 (BTM SLP R)	20	6C (R GAIN KEI)	20
1D (PG CONT)	A0	48 (BTM SLP B)	40	6D (R HUE OFF)	37
1E (V SUB)	B0	49 (KEIKO R)	80	6E (R HUE KEI)	1E
1F (NEGA IRIS)	80	4A (KEIKO B)	30	6F (DELAY TM)	10
20 (AGC)	FF	4B (TOP UP)	85	70 (FAST TM)	30
21 (NEGA Y- γ)	70	4C (TOP DOWN)	67	71 (CAM DDS 0)	00
22	00	4D (MDL UP)	70	72 (MODE)	09
23	00	4E (MDL DWN)	6B	73 (DSP MODE)	00
24 (MGC)	00	4F (BTM UP)	52	74 (CAM ALN)	00
25 (ADJ MODE)	00	50 (BTM DWN)	3C	75 (AWB MODE)	00

Table 7-6.

7-3-6. PG CONT and VSUB Adjustment

1. PG CONT adjustment (VC-85 board)

Subject	Not required
Measurement Point	Pin (A2) of check point array (PG CONT)
Measuring Equipment	Digital voltmeter
Adjustment Address	1D (PG CONT)
Specified Value	(Images voltage) ± 0.1 Vdc

Adjusting method:

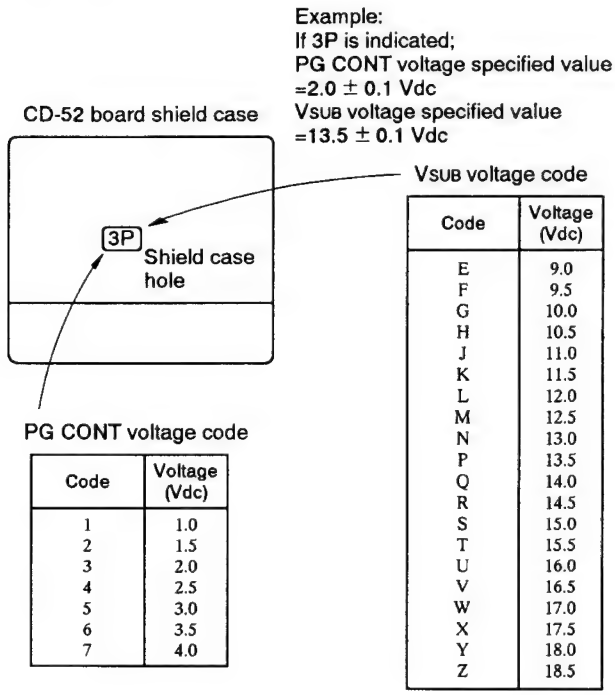
1) Change the adjustment data of the adjustment address 1D by the adjustment remote controller and set PG CONT voltage to (imager voltage) ± 0.1 Vdc.
2) Change the adjustment address to store the last adjustment data in the memory.

2. VSUB adjustment (VC-85 board)

Subject	Not required
Measurement Point	Pin (B4) of check point array (V SUB)
Measuring Equipment	Digital voltmeter
Adjustment Address	1E (V SUB)
Specified Value	(Imager voltage) ± 0.1 Vdc

Adjusting method:

1) Change the adjustment data of adjustment address 1E by the adjustment remote controller and set VSUB voltage to (imager voltage) ± 0.1 Vdc.
2) Change the adjustment address to store the last adjustment data in the memory.



Code	Voltage (Vdc)
1	1.0
2	1.5
3	2.0
4	2.5
5	3.0
6	3.5
7	4.0

Code	Voltage (Vdc)
E	9.0
F	9.5
G	10.0
H	10.5
J	11.0
K	11.5
L	12.0
M	12.5
N	13.0
P	13.5
Q	14.0
R	14.5
S	15.0
T	15.5
U	16.0
V	16.5
W	17.0
X	17.5
Y	18.0
Z	18.5

Fig. 7-12.

7-3-7. Hall Adjustment (VC-85 Board)

Subject	All black (Cover lens with black cap.)
Measurement Point	CN902
Measuring Equipment	AF microprocessor reading tool
Adjustment Element	RF851 (HALL GAIN)
Adjustment Address	1B (HALL OFFSET)
Specified Value	When iris closed: minimum value of 01 to 04 When iris opened: 3D or 3E

Adjusting method:

1) Set RV851 to the mechanical center.
2) Select the adjustment address 25 by the adjustment remote controller and set the adjustment data to 05. (Setting when iris closed)
3) Change the adjustment address to 1B.
4) Change the adjustment data so that the reading tool indication becomes the minimum value of 01 to 04. (Hall off set adjustment)
5) Change the adjustment address to 25 and set the adjustment data to 07. (Setting when iris open)
6) Adjust with RV851 so that the indication of the reading tool indication becomes 3D or 3E. (3D is displayed as 3 σ .)
7) Repeat 2) to 6) until the specified values are met.
8) Select the adjustment address 25 and set the adjustment data to 00.
   (Adjustment mode is released.)
9) Change the adjustment address to store the adjustment in the memory.

7-3-8. Positive Iris Adjustment (VC-85 Board)

Subject	Color bar chart standard picture frame
Filter	ND filter 0.4 and 0.1
Measurement Point	Pin (B11) of check point array (CCD OUT)
Measuring Equipment	Oscilloscope
Adjustment Address	19 (POSI IRIS)
Specified Value	300 ± 10 mV

Adjusting method:

1) Set the adjustment address to 19 with the adjustment remote controller.
2) Change the adjustment data by the adjustment remote controller with no ND filter attached, and set CCD OUT signal level to 300 ± 10 mV.
   (Change data from lower level to higher level and adjust it to the specified value.)
3) Attach the ND filter 0.5 (0.4+0.1) to the front of the lens and make sure that signal levels change smooth.
4) Remove the ND filter and make sure that signal level is 300 ± 20 mV.
5) If the specification is not met, repeat 2) to 4).
6) Change the adjustment address to store the adjustment in the memory.

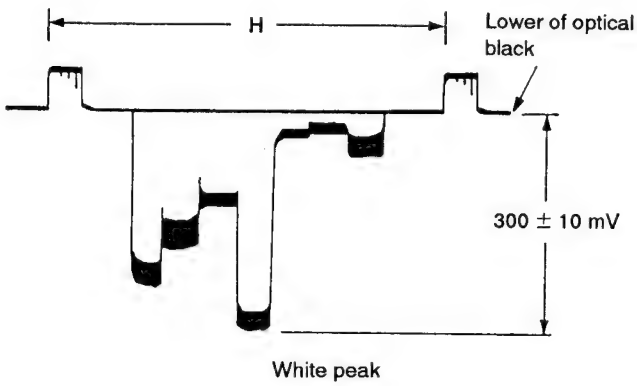


Fig. 7-13.

7-3-9. GC Confirmation (VC-85 board)

Subject	Color bar chart standard picture frame
Measurement Point	Pin (B3) of check point array (Y (LPF) OUT)
Measuring Equipment	Oscilloscope
Adjustment Address	225 ± 25 mVp-p

Checking method:

1) Confirm that Y signal level is 225 ± 25 mVp-p.

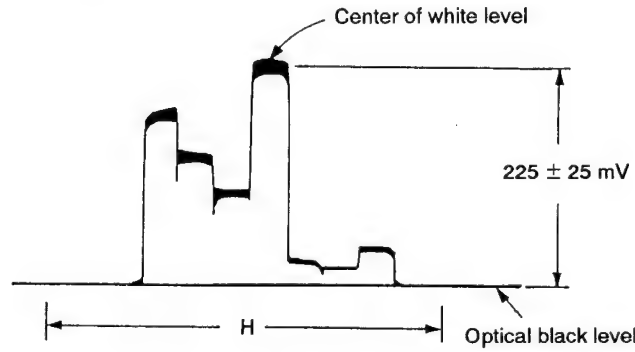


Fig. 7-14.

7-3-10. Y Signal Matrix Adjustment (VC-85 Board)

Subject	Color bar standard picture frame
Measurement Point	1: Pin (A4) (Y0) of check point array 2: Pin (A5) (Y1) of check point array
Measuring Equipment	Oscilloscope
Adjustment Address	0F (Y1 GAIN)
Specified Value	Y1 signal level=Y0 signal level

Note: Connect the probe to the measurement point via 10 KΩ resistor.

Adjusting method:

1) Connect the oscilloscope to Pin (A4) of check point array and measure YO signal level.
2) Connect the oscilloscope to Pin (A5) of check point array.
3) Set the adjustment address to 0F by the adjustment remote controller.
4) Change the adjustment data and match Y1 signal level with Y0 signal level measured in 1).
5) Change the adjustment address to store the adjustment data in the memory.

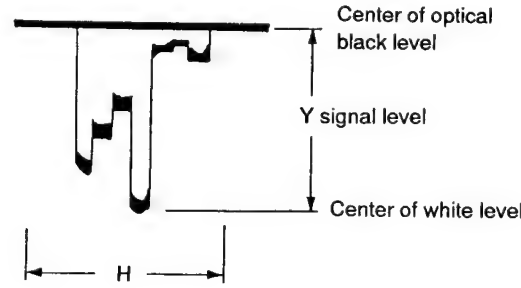


Fig. 7-15.

7-3-11. Chroma Signal Matrix Adjustment (1) (VC-85 Board)

Subject	Color bar standard picture frame
Measurement Point	1: Pin (A6) (C0) of check point array 2: Pin (A7) (C1) of check point array
Measuring Equipment	Oscilloscope
Adjustment Address	0E (C1 GAIN)
Specified Value	C1 signal level=C0 signal level

Adjusting method:

1) Connect the oscilloscope to Pin (A6) of check point array and measure C0 signal level. (The larger level of CR or CB should be C0 signal level.)
2) Signal connect the oscilloscope to Pin (A7) of check point array.
3) Set the adjustment address to 0E by the adjustment remote controller.
4) Change the adjustment data and match C1 signal level with C0 signal level measured in 1).
5) Change the adjustment address to store the adjustment data in the memory.

Fig. 7-16. C0, C1 signal level

7-3-12. Chroma Signal Matrix Adjustment (2) (VC-85 Board)

Subject	Color bar standard picture frame
Measurement Point	CH1 (X): Q712 emitter (B–Y) CH2 (Y): Connecting point (R–Y) between R765 and R822
Measuring Equipment	Oscilloscope (X–Y mode)
Adjustment Address	04 (C2 GAIN)
Specified Value	Separate luminance points should become one.

Note: Adjustment can be done in the same manner as using vectorscope.
(Vectorscope connecting terminal:video output terminal)

Measurement point

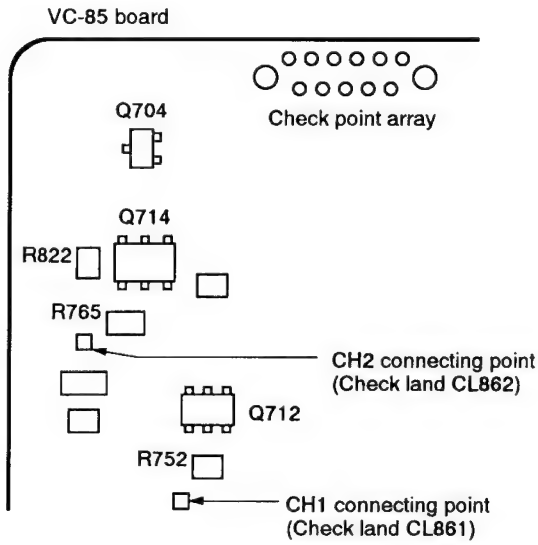


Fig. 7-17.

Adjusting method:

1) Set the adjustment address to 04 by the adjustment remote controller.
2) Change the adjustment data so that two separate color luminance points become one respectively.
3) Change the adjustment address to store the adjustment data in the memory.

Note: Although the white balance is not matched when the adjustment address 75 data is 00, the adjustment can be made without any trouble.

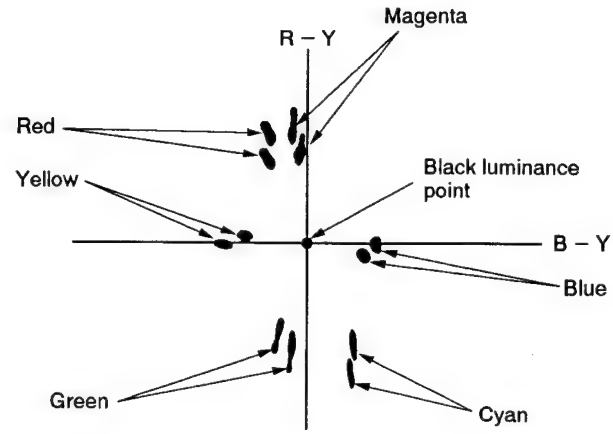


Fig. 7-18.

7-3-13. YH Level Adjustment (VC-85 Board)

Subject	Color bar chart standard picture frame
Measurement Point	Pin Ⓐ⑨ (YH) of check point array
Measuring Equipment	Oscilloscope
Adjustment Address	13 (YH GAIN)
Specified Value	1000 ± 40 mVp-p

Adjusting method:

1) Set the adjustment address to 13 by the adjustment remote controller.
2) Change the adjustment data by the adjustment remote controller and set YH signal level to 1000 ± 40 mVp-p.
3) Change the adjustment address to store the adjustment data in the memory.

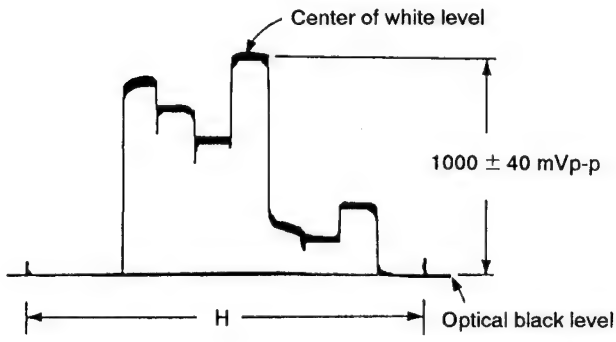


Fig. 7-19.

7-3-14. Sync Level Adjustment (PJ-43 Board)

Subject	All black (Attach the black cap to the lens.)
Measurement Point	J002 (video output) or Pin ⑤ (VIDEO OUT) of CN208 on VC-85 board
Measuring Equipment	Oscilloscope
Adjustment Address	12 (sync level)
Specified Value	300 ± 5 mVp-p

Note: Terminate J002 at 75Ω .

Adjusting method:

1) Set the adjustment address to 12 by the adjustment remote controller.
2) Change the adjustment data by the adjustment remote controller and set sync level to 300 ± 5 mVp-p.
3) Change the adjustment address to store the adjustment data in the memory.

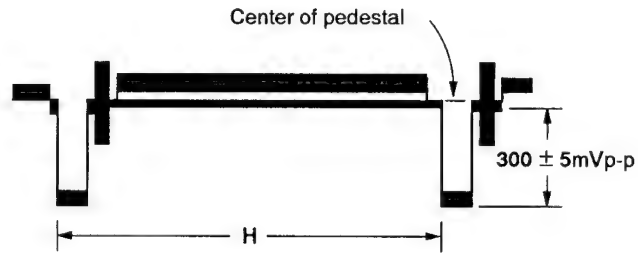


Fig. 7-20.

7-3-15. Setup Adjustment (PJ-43 Board)

Subject	All black (Attach the black cap to the lens.)
Measurement Point	J002 (video output) or Pin ⑤ (VIDEO OUT) of CN208 on VC-85 board
Measuring Equipment	Oscilloscope
Adjustment Address	11 (SET UP)
Specified Value	25 ± 10 mV

Note: Terminate J007 at 75Ω .

Adjusting method:

1) Turn "COLOUR" control (RV102 on VC-85 board) fully counterclockwise. (The procedure to reduce noises)
2) Set the adjustment address to 11 by the adjustment remote controller.
3) Change the adjustment data by the adjustment remote controller and set the set up level to 25 ± 10 mVp-p.
4) Change the adjustment address to store the adjustment data in the memory.
5) Return "COLOUR" control to the center click position.

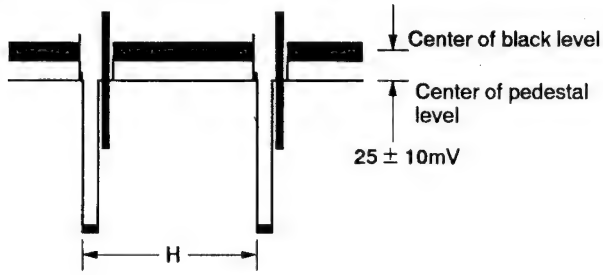


Fig. 7-21.

7-3-16. White Clip Adjustment (PJ-43 Board)

Subject	Color bar chart standard picture
Measurement Point	J002 (video output) or Pin ⑤ (VIDEO OUT) of CN208 on VC-85 board
Measuring Equipment	Oscilloscope
Adjustment Address	15 (POSI Y LEVEL)
Specified Value	820 ± 20 mV

Note: Terminate J007 at 75Ω .

Adjusting method:

1) Turn "COLOUR" control (RV102 on VC-85 board) fully counterclockwise.
2) Set the adjustment address to 15 and record the adjustment data.
3) Set the adjustment data to 40 by the adjustment remote controller.
4) Set the adjustment address to 10 by the adjustment remote controller.
5) Change the adjustment data by the adjustment remote controller and set the white clip level to 820 ± 20 mVp-p.
6) Set the adjustment address to 15 and enter the adjustment data recorded in 2).
7) Change the adjustment address to store the adjustment data in the memory.
8) Return "COLOUR" control to the center click position.

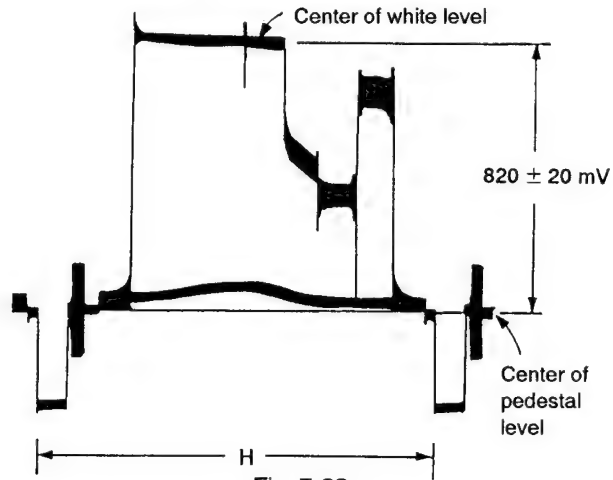


Fig. 7-22.

7-3-17. Y Level adjustment (PJ-43 Board)

Subject	Color bar chart standard picture
Measurement Point	J002 (video output) or Pin ⑤ (VIDEO OUT) of CN208 on VC-85 board
Measuring Equipment	Oscilloscope
Adjustment Address	15 (POSI Y LEVEL)
Specified Value	700 ± 10 mV

Note: Terminate J002 at 75Ω .

Adjusting method:

1) Turn COLOUR control (RV102 on VC-85 board) fully counterclockwise (↺).
2) Set the adjustment address to 15 by the adjustment remote controller.
3) Change the adjustment data by the adjustment remote controller and set Y signal level to 700 ± 10 mV.
4) Change the adjustment address to store the adjustment data in the memory.
5) Return COLOUR control to the center click position.

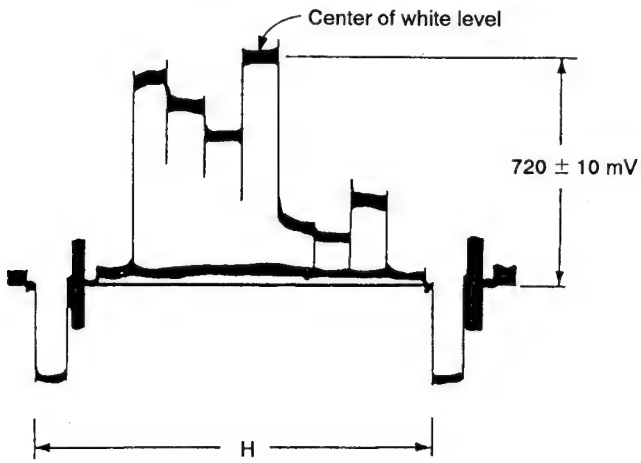


Fig. 7-23.

7-3-18. Aperture Adjustment (VC-85 Board)

Subject	Inmega cycle chart
Measurement Point	Pin (A8) (CAM Y) of check point array
Measuring Equipment	Oscilloscope
Adjustment Address	0A (C LEVEL)
Specified Value	420 ± 20 mV

Adjusting method:

1) Turn COLOUR control (RV102 on VC-85 board) fully counterclockwise (↺).
2) Set the adjustment address to 14 by the adjustment remote controller.
3) Match the focus so that amplitude near 3 MHz becomes maximum.
4) Change the adjustment data so that the difference between 0.5 MHz level (peak not included) and 3 MHz peak level become 70 ± 10 mV.
5) Change the adjustment address to store the adjustment data in the memory.
6) Return COLOUR control to the center click position.

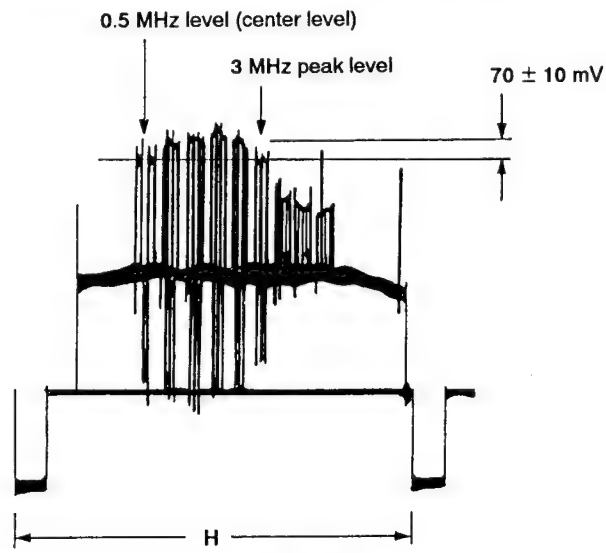


Fig. 7-24.

7-3-19. Chroma Level Adjustment (VC-85 Board)

Subject	Color bar chart standard frame
Measurement Point	Pin (A1) (G OUT) of check point array
Measuring Equipment	Oscilloscope
Adjustment Address	0A (C LEVEL)
Specified Value	320 ± 20 mV

Connection:

1) Connect with a jumper wire between Pin (B7) (MODE) of check point array and GND.

Adjusting method:

1) Set the adjustment address to 0A by the adjustment remote controller.
2) Change the adjustment data with the adjustment remote controller and set G OUT signal level to 320 ± 20 mV.
3) Change the adjustment address to store the adjustment data in the memory.

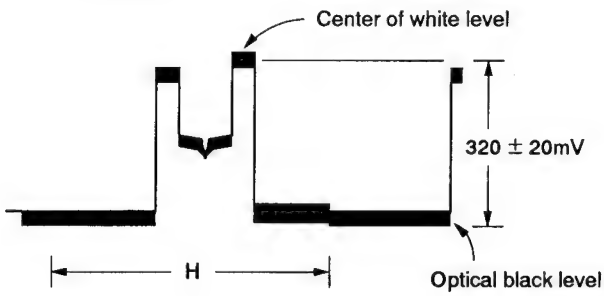


Fig. 7-25.

7-3-20. Burst Phase Adjustment (PJ-43 Board) (Method Using Vectorscope)

Subject	All black (cover lens with black cap)
Measurement Point	CNJ002 (VIDEO OUT)
Measuring Equipment	Vectorscope
Adjustment Address	17 (HUE CONT)
Specified Value	135° ± 1°

Adjusting method:

1) Set adjustment address to 17 with the adjustment remote controller.
2) Change adjustment data so as to set the burst luminance point in the 135° ± 1° position.
3) Change the adjustment address to store the adjustment data in the memory.
4) Perform Burst Level Adjustment.

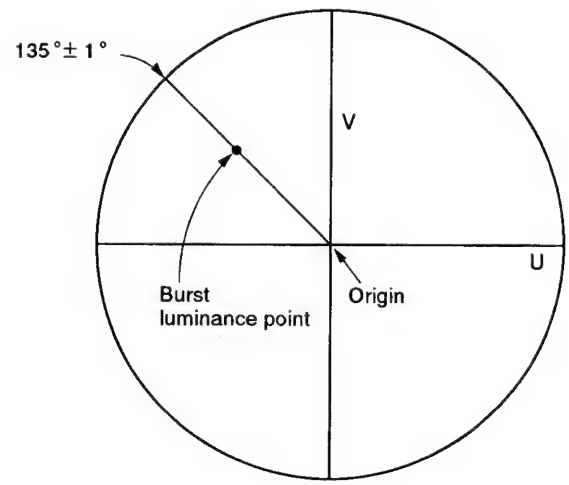


Fig. 7-26.

7-3-21. Burst Phase Adjustment (PJ-43 Board) (Method Using Oscilloscope)

Subject	All black (cover lens with black cap)
Measurement Point	CNJ002 (VIDEO OUT) or Pin ⑤ of CN208 on VC-85 board
Measuring Equipment	Oscilloscope (Trigger slope: +)
Adjustment Address	17 (HUE CONT)
Specified Value	Burst phase should become a single line.

Adjusting method:

1) Set adjustment address to 17 with the adjustment remote controller.
2) Change the adjustment data so as to turn the burst waveform into a single line.
3) Change the adjustment address to store the adjustment data in the memory.
4) Perform Burst Level Adjustment.

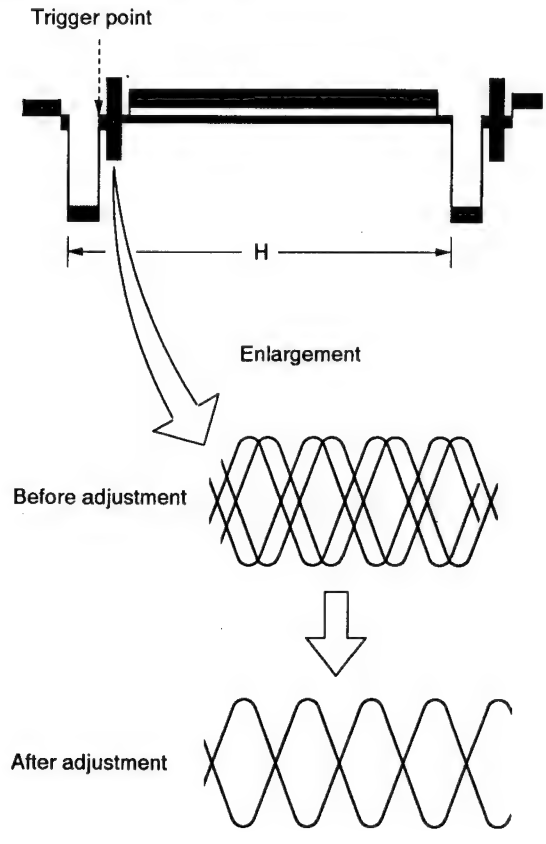


Fig. 7-27.

7-3-22. Burst Level Adjustment (PJ-43 Board)

Subject	All black (Attach the black cap to the lens.)
Measurement Point	CNJ002 (video output) or Pin ⑤ (VIDEO OUT) of CN208 on VC-85 board
Measuring Equipment	Oscilloscope
Adjustment Address	16 (BURST LEVEL)
Specified Value	300 ± 5 mVp-p

Note: Terminate J002 at 75Ω .

Adjusting method:

1) Set the adjustment address to 16 by the adjustment remote controller.
2) Change the adjustment data by the adjustment remote controller and set the burst level to 300 ± 5 Vmp-p.
3) Change the adjustment address to store the adjustment data in the memory.

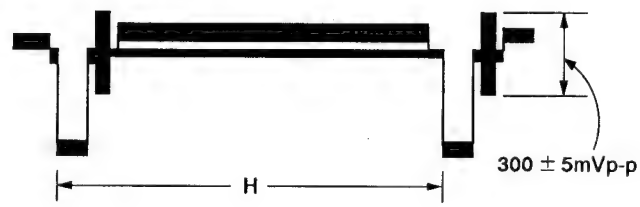


Fig. 7-28.

7-3-23. Negative Iris Adjustment (VC-85 Board)

Subject	Negative color bar chart standard picture frame
Measurement Point	Pin (B11) (CCD OUT) of check point array
Measuring Equipment	Oscilloscope
Adjustment Address	1F (NEGA IRIS)
Specified Value	300 ± 10 mV

Switch setting
Negative/positive selection·····negative

Adjusting method:
1) Set the adjustment address to 1F by the adjustment remote controller.
2) Change the adjustment data by the adjustment remote controller and set CCD OUT signal level to 300 ± 10 mV. (Change the data from small to large level to meet the specification.)
3) Change the adjustment address to store the adjustment data in the memory.

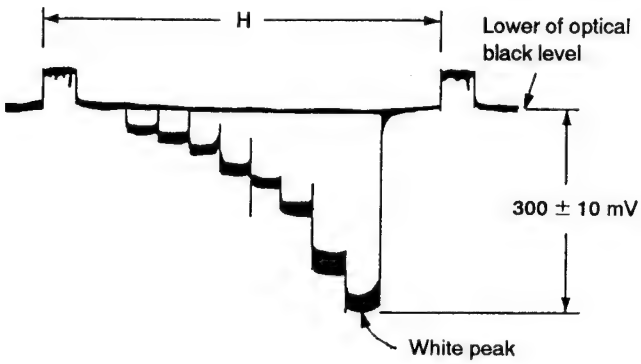


Fig. 7-29.

7-3-24. Negative Y Level Adjustment (PJ-43 Board)

Subject	Negative color bar standard picture frame
Measurement Point	J002 (video output) or Pin ⑤ (VIDEO OUT) of CN208 on VC-85 board
Measuring Equipment	Oscilloscope
Adjustment Address	18 (NEGA Y LEVEL) 0D (NEGA PED)
Specified Value	White level: 660 ± 10 mV Black level: 50 ± 10 mV

Note: Terminate J002 at 75Ω .

Switch setting:
Negative/positive selection·····negative

Adjusting method:
1) Turn "COLOUR" control (RV102 on VC-85 board) fully counterclockwise.
2) Set the adjustment address to 0D by the adjustment remote controller.
3) Change the adjustment data by the adjustment remote controller and set black level to 50 ± 10 mV.
4) Set the adjustment address to 18.
5) Change the adjustment address and set the white level to 660 ± 10 mV.
6) Repeat 2) to 5) until both specified values are met.
7) Change the adjustment address to store the adjustment data in the memory.
8) Return "COLOUR" control to the center click position.

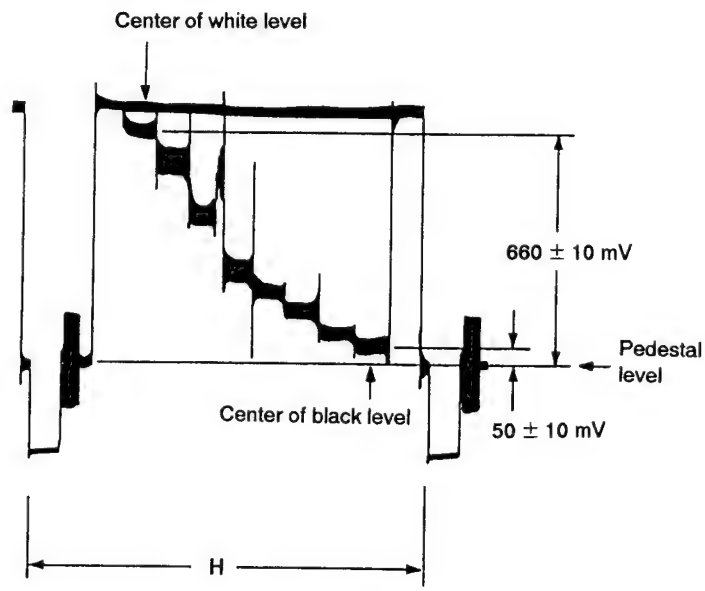


Fig. 7-30.

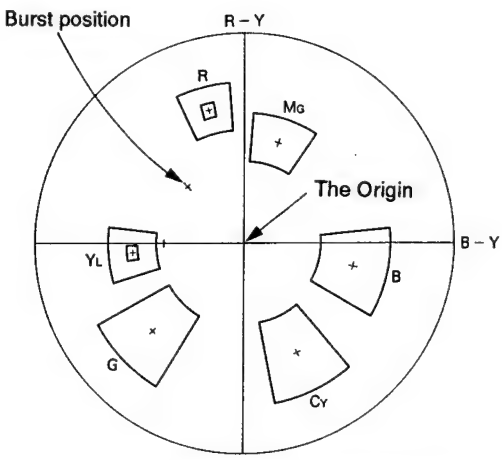
7-3-25. Negative Color Reproduction Adjustment (PJ-43 Board)

Subject	(Method Using Vectorscope) Negative color bar chart standard picture frame
Measurement Point	J002 (video output)
Measuring Equipment	Vectorscope
Adjustment Address	0B (NEGA R GAIN) 0C (NEGA B GAIN) 05 (NEGA R-Y GAIN) 06 (NEGA B-Y GAIN) 07 (NEGA R-Y HUE) 08 (NEGA B-Y HUE)
Specified Value	All color luminance points are within color reproduction frame.

Switch setting
Negative/positive selection·····negative

Adjusting method:

1) Confirm that the adjustment data of adjustment address 75 (AWB MODE) is 00. And set the adjustment address to 01, then 02.
2) Adjust the phase and gain of the vectorscope to set the burst luminance points to the designated position on the color reproduction frame (negative).
3) Change the data of adjustment address 0B and 0C by the adjustment remote controller, and match black luminance point with the origin.
4) Change each adjustment data of the adjustment address 05 to 08 and set all color luminance points within color reproduction frame.
5) Change the adjustment address to store the adjustment data in the memory.



Color reproduction frame for vectorscope
(negative) for vectorscope

Fig. 7-31.

7-3-26. Negative Color Reproduction Adjustment (Method Using Oscilloscope)

1. GAIN adjustment (PJ-43 board)

Subject	Negative color bar chart standard picture frame
Measurement Point	J002 (video output) or Pin ⑤ (video out) of CN208 on VC-85 board
Measuring Equipment	Oscilloscope
Adjustment Address	0B(NEGA R GAIN) 0C(NEGA B GAIN) 05(NEGA R-Y GAIN) 06(NEGA B-Y GAIN)
Specified Value	1. Chroma signal level of "black" is minimum. 2. Chroma signal level of "red" is 517 ± 32 mVp-p. 3. Chroma signal level of "yellow" is 422 ± 24 mVp-p.

Note: Terminate J002 at 75Ω .

Switch setting
Negative/positive selection·····negative

Adjusting method:
- White balance adjustment
  1) Confirm that the adjustment data of adjustment address 75 (AWB MODE) is 00. And set the adjustment address to 01, then 02.
  2) Change the data of adjustment address 0B and 0C by the adjustment remote controller and make chroma signal level of "Black" is minimum.
- Gain adjustment
  3) Set adjustment address to 06 by the adjustment remote controller and set adjustment data to "CA".
  4) Set adjustment address to 07 and set adjustment data to "C3".
  5) Set adjustment address to 08 and set adjustment data to "CB".
  6) Set adjustment address to 05 and change adjustment data so that chroma signal level of "red" becomes 517 ± 32 mVp-p.
  7) Set adjustment address to 06 and change adjustment data so that chroma signal level of "Yellow" becomes 422 ± 24 mVp-p.
  8) Repeat 5) to 6).
  9) Change the adjustment address to store the adjustment data in the memory.
  10) Perform "Hue adjustment".

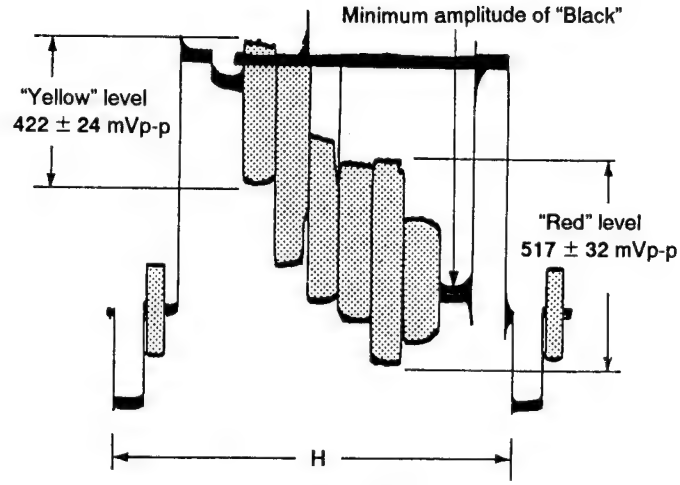


Fig. 7-32.

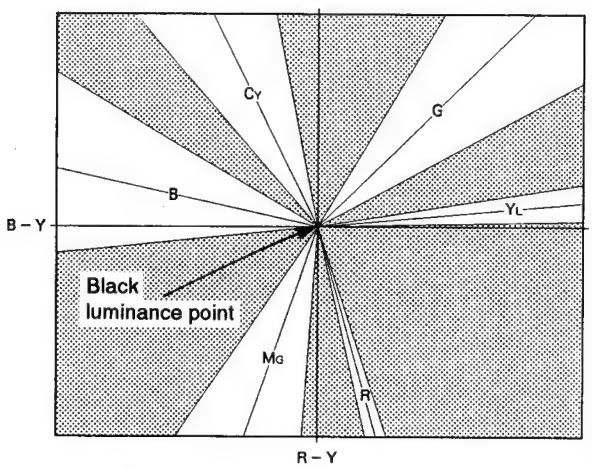
2. Hue adjustment (VC-85 board)

Subject	Negative color bar chart standard picture frame
Measurement Point	CH1 (X): Q712 (B-Y) CH2 (Y): connecting point (R-Y) between R765 and R822 (See Fig. 7-17.)
Measuring Equipment	Oscilloscope (X-Y mode)
Adjustment Address	07 (NEGA R-Y HUE) 08 (NEGA B-Y HUE)
Specified Value	All color luminance points are within color reproduction frame.

Switch setting
Negative/positive selection·····negative

Adjusting method:

1) Move the black luminance point on the oscilloscope to the origin point of the color reproduction frame.
2) Change the adjustment data at adjustment addresses 07 and 08 with the adjustment remote controller to bring the various color luminance points into the color reproduction frame.
   Note: The luminance points are inverted up/down and right/left against positive color reproduction frame.
3) Check the hue reproduced on the monitor TV and fine adjust the adjustment data at adjustment addresses 07 and 08 if necessary.
4) Set the oscilloscope to normal mode and connect it to J002 (video output) on the PJ-43 board, then make sure that the specified value of " 1. Gain adjustment" is met. If not, change the data of the adjustment addresses 05 and 06.
5) Change the adjustment address to store the adjustment data in the memory.



Negative color reproduction frame for oscilloscope

Fig. 7-33.

7-3-27. Negative Pre-white Balance Adjustment (VC-85 Board)

Subject	Negative white balance chart (orange) standard picture frame
Measurement Point and Measuring Equipment	When vectorscope used: J002 on PJ-43 board (video output) or Pin ⑤ (VIDEO OUT) of CN208 When Oscilloscope (X-Y mode) used: CH1 (X): Q712 emitter (B-Y) CH2 (Y): connecting point (R-Y) between R765 and R822 (See Fig. 7-17)
Adjustment Address	0B (NEGA R GAIN) 0B (NEGA R GAIN)
Specified Value	When vectorscope used: The white luminance point should be within origin centered circle of ϕ 1 mm. When oscilloscope used. White luminance point and black luminance point should be matched.

Switch setting
Negative/positive selection·····negative

Adjusting method:

1) Make sure that the adjustment data of adjustment address 75 (AWB MODE) is 00. And set the adjustment address to 01, then 02.
2) Change the data of adjustment address 0B and 0C, and match white luminance point with the origin. (When the oscilloscope is used, match white luminance point with the origin. At this time, make sure that the white pattern has no color on the monitor TV.)
3) Change the adjustment address to store the adjustment data in the memory.

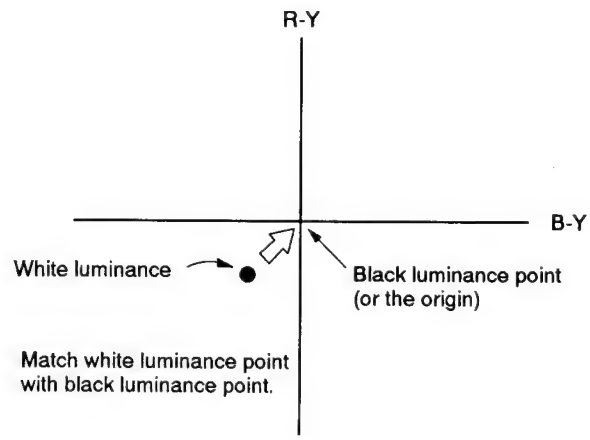


Fig. 7-34.

7-3-28. Auto White Balance Adjustment

Note: Be sure to perform this adjustment after completing preset adjustment.

1. Preset adjustment (VC-85 board)

Subject	Negative white balance pattern (orange)

Note: 1) Perform preset adjustment after applying power for more than 30 sec.
2) Be sure to OFF/ON the power supply before performing preset adjustment again.

Switch setting
Negative/positive selection·····negative

Preparation:
Confirm that EVR ADJ mode is normal. TP106 (CAM ADJ) and (Pin (B6) of check point array are open.)
1) Prepare to connect with 1 kΩ resistor between Pin (B5) (AW ADJ) on the check point array and Pin ① of IC207 (REV 5V).

Adjusting method:
1) After OFF/ON the power, connect with the jumper wire between TP106 (or Pin (B6) (CAM ADJ) on the check point array) and GND, then wait for more than 30 seconds.
2) Select the adjustment address 75 (AW ADJ) and set adjustment data to E0. (3200k preset data read mode)
3) Change the adjustment address to store the adjustment data in the memory. Wait five seconds or more.
4) Disconnect the jumper wire between TP106 (CAM ADJ) and GND.
5) Connect with a 1 kΩ resistor between Pin (B5) (AWB ADJ) of check point array and Pin ① (REG 5V) of IC207.
6) Connect with the jumper wire between TP106 (CAM ADJ) and GND.
7) Confirm that the display data (address 01) of the adjustment remote controller has changed.
8) Disconnect the jumper wire connected to TP106 (CAM ADJ) after allowing one second or more to elapse.
9) Disconnect the 1 kΩ resistor connected to Pin (B5) (AWB ADJ) of check point array.
10) Connect with the jumper wire between TP106 (CAM ADJ) and GND.
11) Perform the following "Auto White Balance Adjustment".

2. Auto White Balance Adjustment (VC-85 board)

Subject	White balance chart (gray) standard picture frame
Measurement Point	When vectorscope used: J002 on PJ-43 board (video output) or Pin ⑤ (VIDEO OUT) of CN208 on VC-85 board When Oscilloscope (X-Y mode) used: CH1 (X):Q712 emitter (B-Y) CH2 (Y):connecting point (R-Y) between R765 and R822 (See Fig. 7-17)
Adjustment Address	01 (DELTA R) 02 (DELTA B)
Specified Value	When vectorscope used: White luminance point and the origin should be matched. When oscilloscope used: White luminance point and black luminance point should be matched.

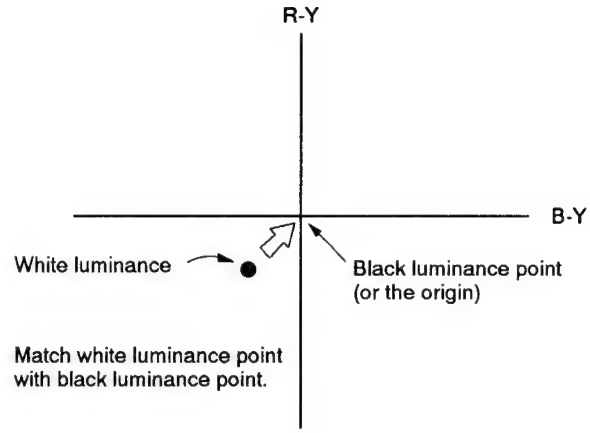


Fig. 7-35.

Switch setting
Negative/positive selection·····negative

Adjusting method:

1) Connect with the jumper wire between Pin (B1) (WB ADJ) of check point array and GND.
2) Select the adjustment address 75 and set adjustment data to 10. (auto white balance adjustment mode)
3) Confirm that the white balance chart (gray) is attached.
4) Change the data of 01 and 02 of the adjustment address and match white luminance point with the origin. (When using oscilloscope, match with black luminance point.)
5) Select the adjustment address 75 and set adjustment data to F0. (auto white balance tracking zone invalid:all area discrimination mode)
6) Change the data of 01 and 02 of the adjustment address and match the white luminance point with the origin. (When using oscilloscope, match with black luminance point.)
7) Disconnect the jumper wire connected to TP106 (CAM ADJ) and GND.
8) Disconnect the jumper wire connected to Pin (B1) of check point array and GND.
9) Connect with the jumper wire between TP106 (CAM ADJ) and GND.
10) Set negative/positive selection switch to positive side.
11) Perform "Positive pre-white balance adjustment".

7-3-29. Positive Pre-white Balance Adjustment (VC-85 Board)

Subject	White pattern fully TELE[Note 1]
Measurement Point	When vectorscope used. J002 (video output) on PJ-43 board or Pin ⑤ (VIDEO OUT) of CN208 on VC-85 board When oscilloscope used: CH1 (X):Q712 emitter (B-Y) CH2 (Y):connecting point (R-Y) between R765 and R822 (See Fig. 7-17.)
Adjustment Address	1A (POSI R GAIN) 1C (POSI B GAIN)
Specified Value	When vectorscope used. The white luminance point is within the origin centered circle of ϕ 1 mm. When oscilloscope used. White luminance point and black luminance point should be matched.

Note: Remove the chart and shoot the white diffusing surface of light source in fully TELE end. At this time, check that no dust or stain is attached on the white diffusing surface.

Adjusting method:

1) Confirm that negative/positive selection switch is set to positive side.
2) Set the adjustment address to 75 (AWB MODE) and confirm that adjustment data is F0.
3) Set the adjustment address to 01.
4) Set the adjustment address to 02.
5) Set the adjustment address to 1A.
6) Change the data of 1A and 1C of the adjustment address and match white luminance point with the origin. (When using oscilloscope, match with black luminance point.)
7) Change the adjustment address to store the adjustment data in the memory.

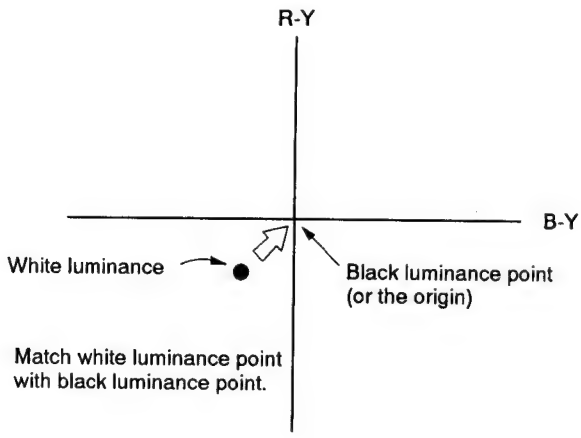


Fig. 7-36.

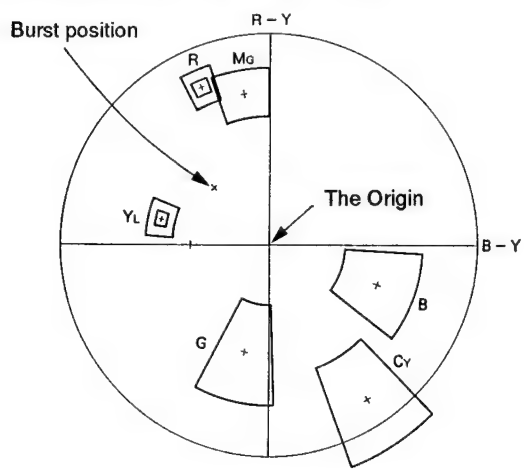
7-3-30. Positive Color Reproduction Adjustment (Method using vectorscope)

Subject	Color bar chart standard picture frame
Measurement Point	J002 on PJ-43 board (video output)
Measuring Instrument	Vectorscope
Adjustment Element	RV509 (POSI R-Y GAIN) RV510 (POSI B-Y GAIN) RV511 (POSI R-Y HUE) RV512 (POSI B-Y HUE)
Specified Value	All color luminance points should be within positive color reproduction frame.

Note: "Burst level adjustment" should already had be done.

Adjusting method:

1) Confirm that the adjustment data of adjustment address 75 is F0. And set the adjustment address to 01, then 02.
2) Disconnect the jumper wire between TP106 (CAM ADJ) and GND.
3) Adjust the phase and gain of the vectorscope to set the burst luminance points to the designated position on the color reproduction frame (positive).
4) Turn RV509 to 512 and make all color luminance points within positive color reproduction frame.



Color reproduction frame for vectorscope (positive)

Fig. 7-37.

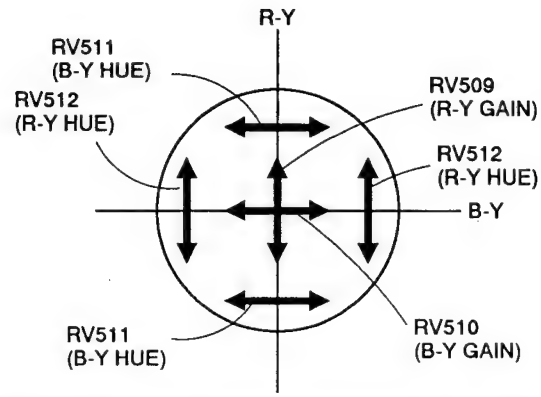


Fig. 7-38. Moving direction of adjustment element and luminance point.

7-3-31. Positive Color Reproduction Adjustment (Method using oscilloscope)

Subject	Color bar chart standard picture frame
Measurement Point	JOO (video output) or Pin ⑤ (VIDEO OUT) of CN208 on VC-85 board
Measuring Instrument	Oscilloscope
Adjustment Address	RV509 (POSI R-Y GAIN) RV510 (POSI B-Y GAIN)
Specified Value	"Red" level: 645 ± 32 mVp-p "Yellow" level: 422 ± 24 mVp-p

Note: Terminate J002 at 75Ω .

Adjusting method:

1) Make sure that the adjustment data of adjustment address 75 (AWB MODE) is 00.
2) Disconnect the jumper wire between TP106 (CAM ADJ) and GND.
3) Set RV510 and 512 to the mechanical center.
4) Set "Red" level to 645 ± 32 mVp-p with RV509.
5) Set "Yellow" level to 422 ± 24 mVp-p with RV510.
6) Repeat 3) and 4) until the both specified values are met.
7) Perform "Hue adjustment".

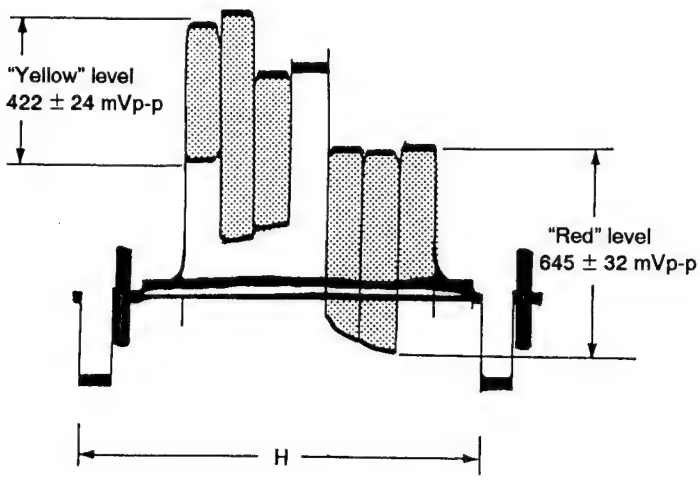


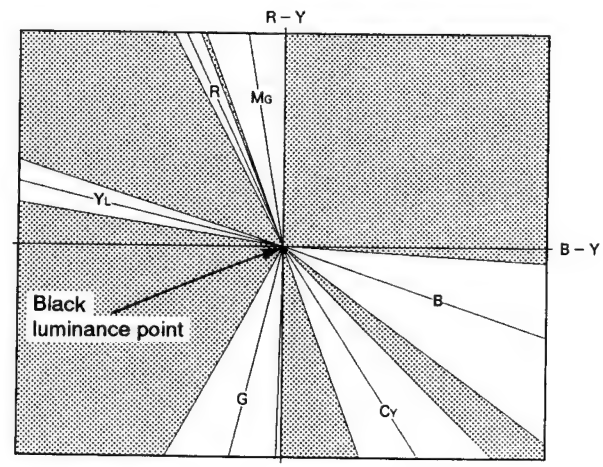
Fig. 7-39.

2. Hue adjustment (VC-85 board)

Subject	Color bar chart standard picture
Measurement Point	CH1 (X):Q712 emitter (B-Y) CH2 (Y):connecting point (R-Y) between R765 and R822 (See Fig. 7-17)
Measuring Instrument	Oscilloscope (X–Y mode)
Adjustment Address	RV511 (POSI R-Y HUE) RV512 (POSI B-Y HUE)
Specified Value	Each luminance point should be within the (positive) color reproduction frame.

Adjusting method:

1) Confirm that the jumper wire between TP106 (CAM ADJ) and GND is disconnected.
2) Match "Black" luminance point with the origin of color reproduction frame (positive).
3) Turn RV511 and 512 and set each luminance point within the color reduction frame.
4) Confirm that hue reproduced on the monitor TV and fine adjust RV511 and 512 if necessary.
5) Set the oscilloscope in normal mode and connect to J002 (video output, terminated at 75Ω), then confirm that the specified value of "1. Gain adjustment" is met. If not, adjust RV509 and RV510.



Color reproduction frame for oscilloscope (positive)

Fig. 7-40.

7-3-32. Auto Focus Adjustment (VC-85 board)

1. Adjustment in all black pattern

Subject	All black (Attach a black cap to the lens.)
Measurement Point	CN902
Measuring Instrument	Reading tool for AF microprocessor data
Adjustment Address	31 (FHB), 33 (AGC B)

Adjusting method:

1) Set the adjustment address 25 by the adjustment remote controller and set adjustment data to FF. (Set the auto focus filter to FH side.)
2) Read the display data (FH B) of AF microprocessor data reading tool and enter adjustment address 31. (FH B should be 00 to 05.)
3) Set the adjustment address 25 by the adjustment remote controller and set adjustment data to FD. (Set the auto focus filter to FA side.)
4) Confirm the displayed data (FA B) of AF microprocessor data reading tool is 00 to 08.)
5) Set the adjustment address 25 and enter adjustment data 0B. (AGC A/D value display mode)
6) Read the display data (AGC B) of AF microprocessor data reading tool and enter adjustment address 33.
7) Perform "Adjustment in white pattern".

2. Adjustment in white pattern

Subject	White pattern fully TELE end Note 1
Measurement Point	CN902
Measuring Instrument	AF micro processor reading tool
Adjustment Address	30 (FWH), 32 (AGC W)

Note: Remove the chart and shoot the white diffusing surface of light source in fully TELE end. At this time, check that no dust or stain is attached on the white diffusing surface.

Adjusting method:

1) Set the adjustment address 25 by the adjustment remote controller and enter adjustment data FF.
2) Read the displayed data (FH W) of AF microprocessor data reading tool and enter adjustment address 30. (FH W should be 00 to 04.)
3) Set the adjustment address 25 by the adjustment remote controller and enter adjustment data FD.
4) Confirm that the displayed data (FA W) of AF microprocessor data reading tool is 00 to 06.)
5) Set the adjustment address 25 and enter adjustment data is 0B.
6) Read the displayed data (AGC W) of AF microprocessor data reading tool and enter adjustment address 32.
7) Set the adjustment address 25 and enter adjustment data 00.
8) Change the adjustment address to store the adjustment data in the memory.

7-3-33. Auto Focus Confirmation (VC-85 Board)

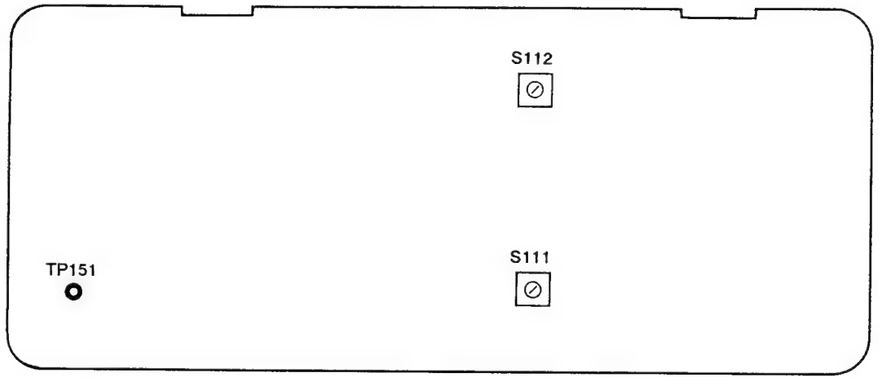
Subject	Siemens star
Filter	ND filter 1.0 and 0.1 (2 pcs)
Measurement Point	CN902
Measuring Instrument	AF microprocessor reading tool

Adjusting method:

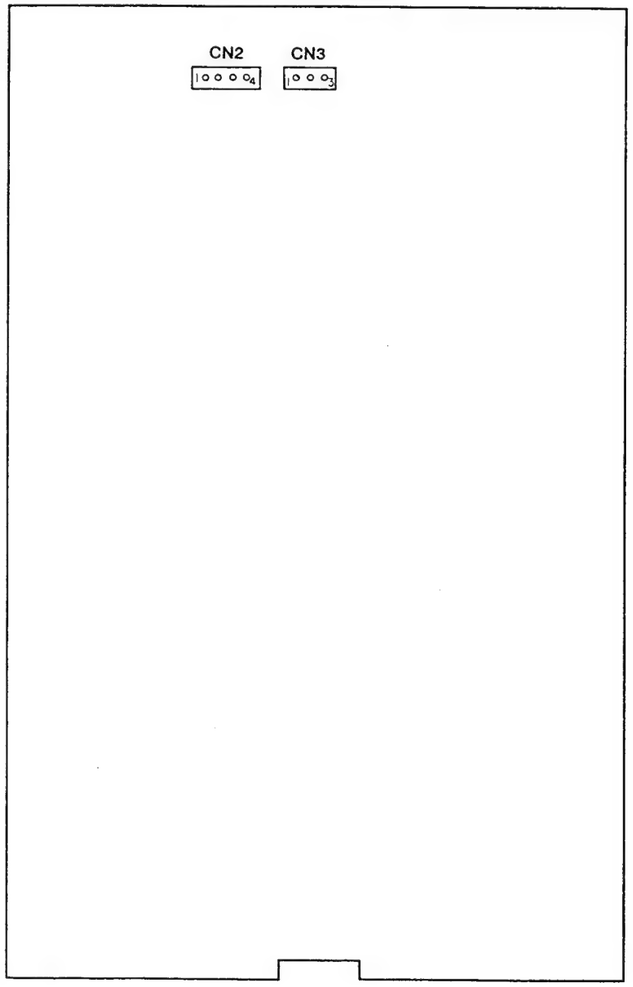
1) Mount the ND filter 1.2 (1.0+0.1+0.1) on the lens.
2) Press the zoom T button to set the zoom TELE end.
3) Adjust the chart position so that the center of siemens star matches with that of the monitor TV screen.
4) Press the focus N button to set the focus near end.
5) Keep pressing "AUTO" button for three seconds and hand off the button after confirming a sharp image.
6) Set the adjustment address 25 by the adjustment remote controller and enter adjustment data FF.
7) Confirm that the displayed data (FH SM) of AF microprocessor data reading tool is 0F to 37.
8) Set the adjustment address 25 and enter adjustment data FD.
9) Confirm that the display data (FA SM) of AF microprocessor data reading tool is 4E to 80.
10) Set the adjustment address 25 and enter adjustment data 00.
11) Change the adjustment address to store the adjustment data in the memory.

7-4. ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

FA-1 BOARD (COMPONENT SIDE)



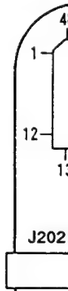
POWER BLOCK (CONDUCTOR SIDE)



VC-85

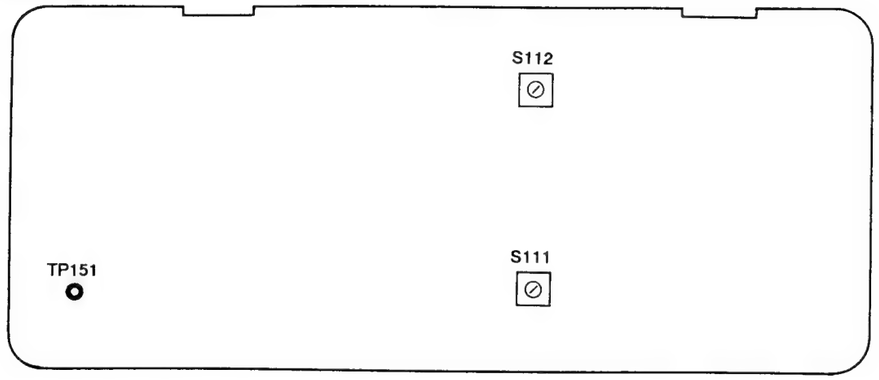
VC-85

VC-85

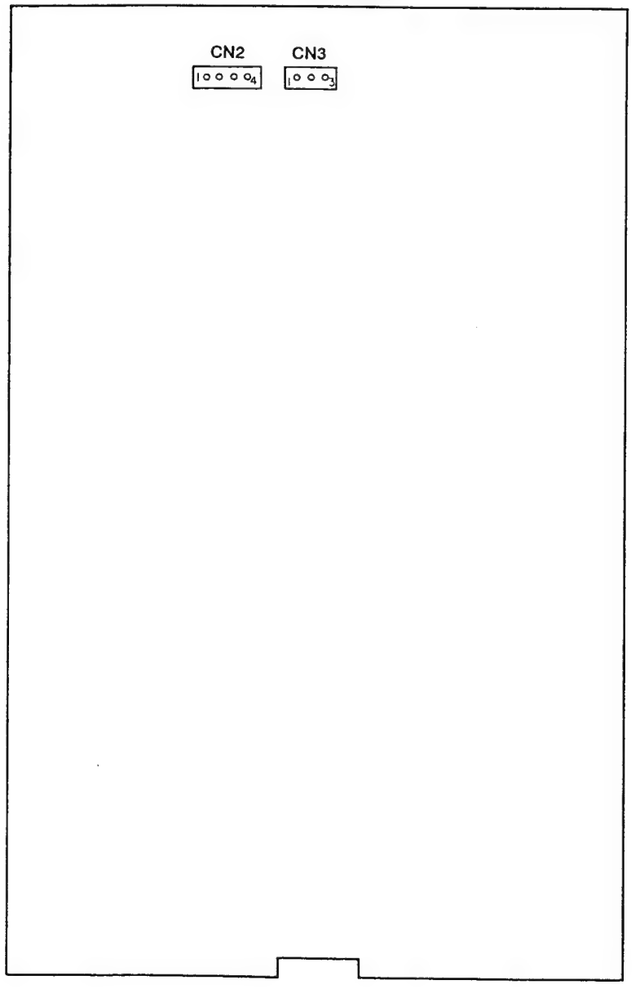


7-4. ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

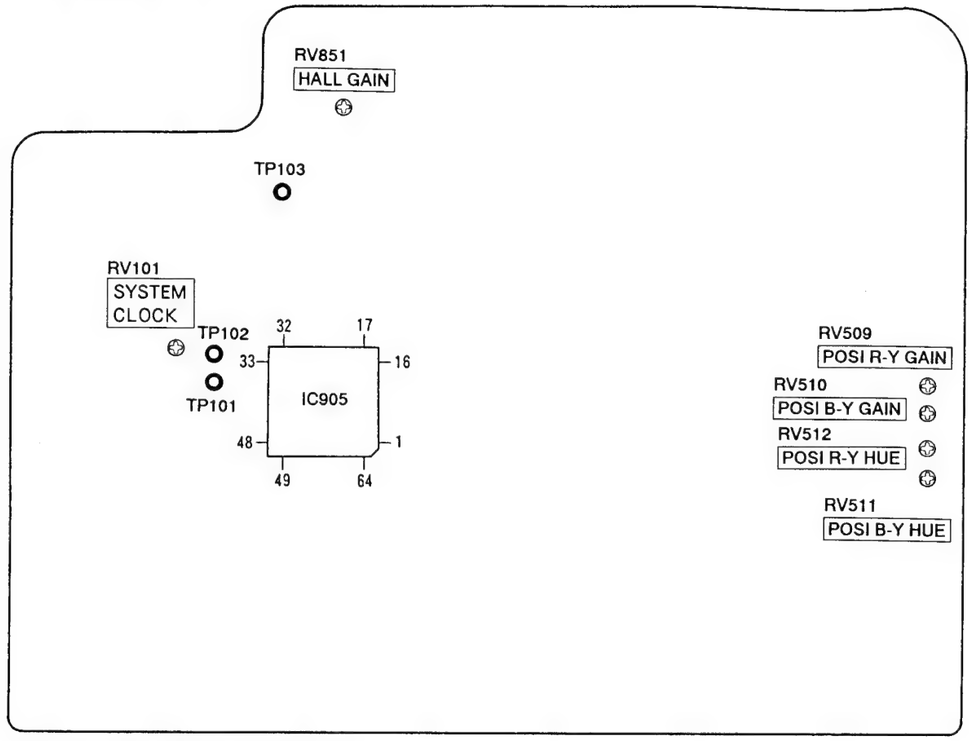
FA-1 BOARD (COMPONENT SIDE)



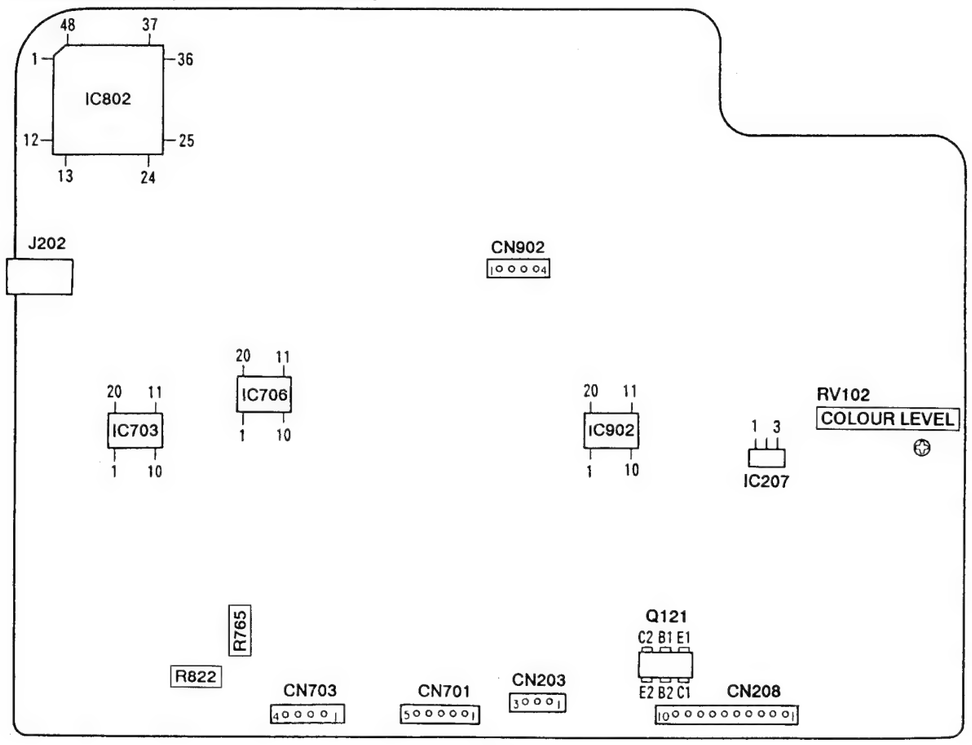
POWER BLOCK (CONDUCTOR SIDE)



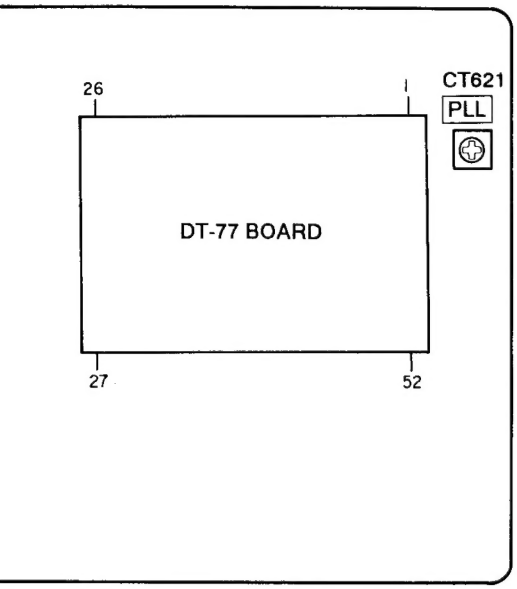
VC-85 BOARD (COMPONENT SIDE)

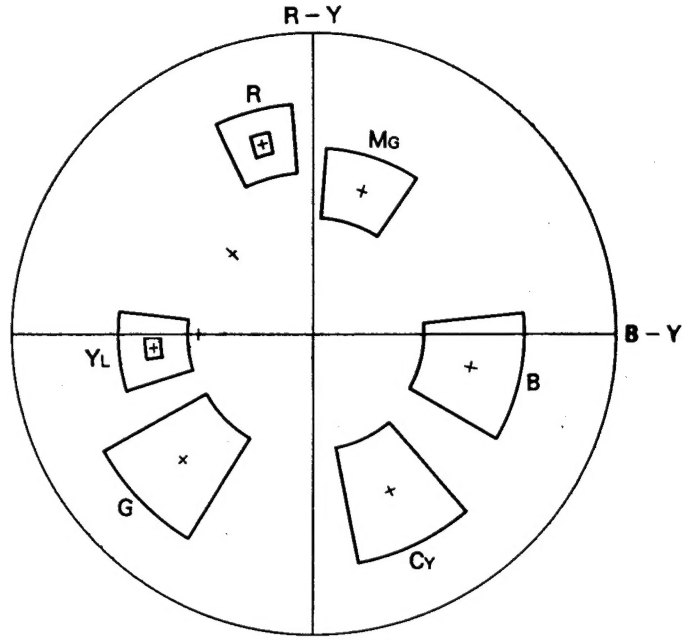


VC-85 BOARD (CONDUCTOR SIDE)

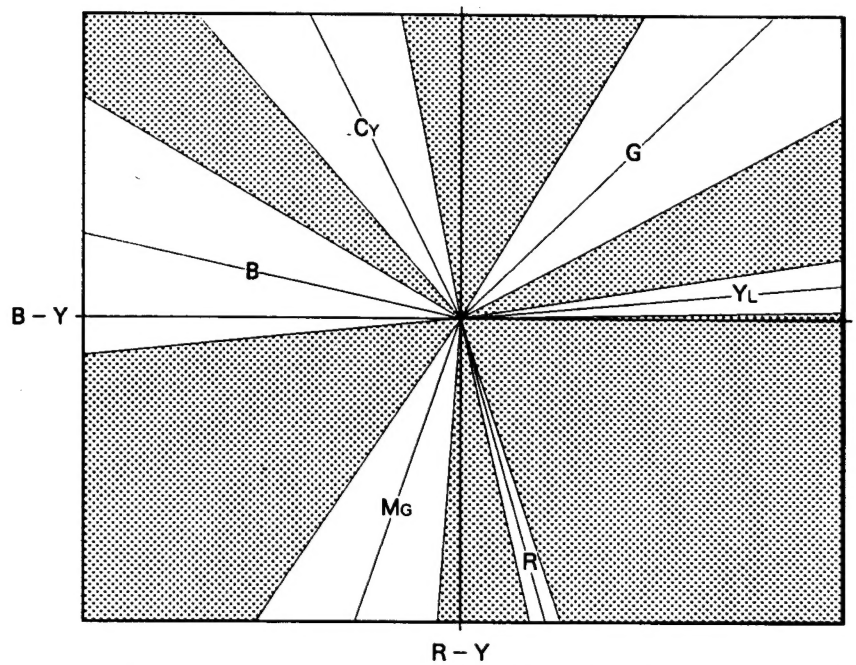


) BOARD (COMPONENT SIDE)

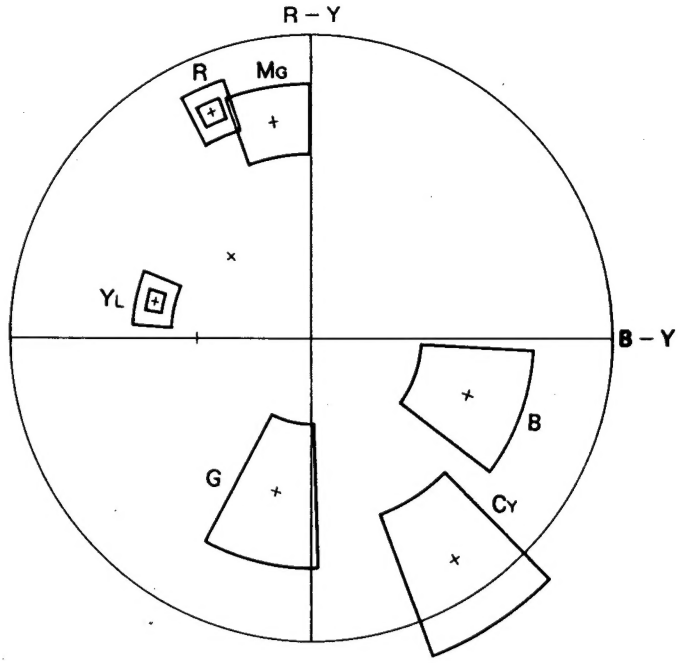




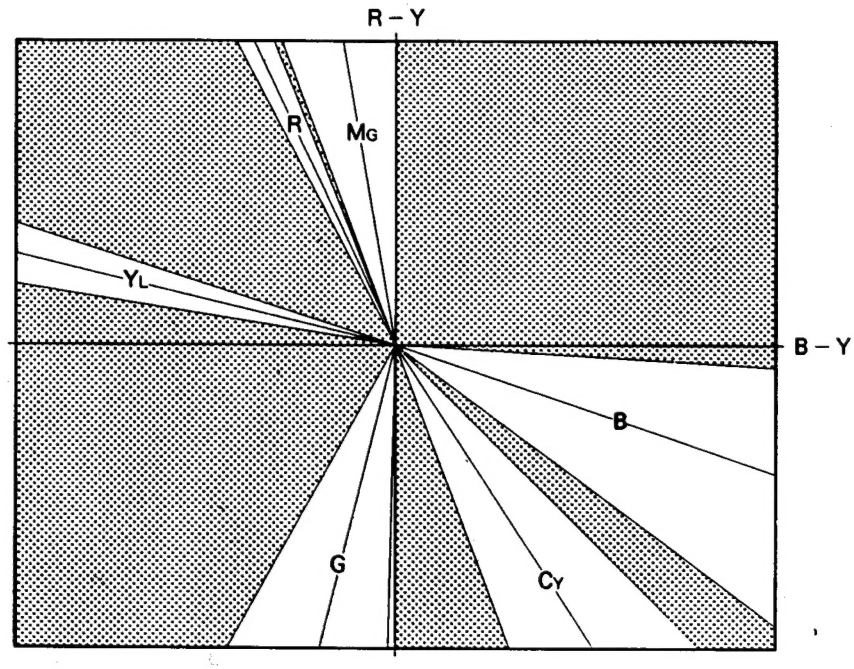
Color Reproducibility Adjustment (For Negative)
For Vectorscope



Color Reproducibility Adjustment (For Negative)
For Oscilloscope



Color Reproducibility Adjustment (For Positive)
For Vectorscope



Color Reproducibility Adjustment (For Positive)
For Oscilloscope

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